An Address
ON
MOVEABLE KIDNEY, WITH DETAILS OF AN OPERATION FOR FIXING THE KIDNEY.

Delivered at the Annual Meeting of the Ipswich Clinical Society on Feb. 16th, 1909,

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GENTLEMEN,—The surgical treatment of moveable kidney is a question which has given rise to great diversity of opinion, the chief objection urged against the operation of nephropexy being that it often fails to remove the symptoms from which the patient has been suffering. Indeed, not infrequently the patient after a few months is as bad as, or worse than, before the operation. There is more than one explanation of this result. In the first place, the cases may have been unsuitable for operation—that is to say, the loose kidney has not been the whole or even the main cause of the trouble; in the second place, the operation may not have been satisfactorily performed and the kidney may not have been fixed in the proper position; and in the third place, the kidney may subsequently have become loose. Before going on to the consideration of these points let me first refer shortly to the conditions under which mobility of the kidney occurs, to the effect of this mobility on the kidney itself, and to the symptoms to which it may give rise.

In connexion with the occurrence of moveable kidney, I may point out in the first place that it is far more common in women than in men. Various estimates have been given by different authors from which it appears that on an average one case of moveable kidney is met with in about every 200 males, while in females there is one in every 22. It has also been said that it is more common in working women than in those of the better class, but this is not very clear. Nor is there much difference as regards its occurrence in married and single women respectively. In connexion with this difference in sex we have to bear in mind in the first place the greater narrowness of the lower part of the female thorax, and in the second place the arrangement of the clothing. It is very probable that the latter is the main cause of moveable kidney in the female. It is also a striking fact that moveable kidney occurs far more frequently on the right side than on the left side, something over 80 per cent. of the cases affecting the right kidney alone. This is probably in the main due to the fact that the left kidney is more efficiently fixed than the right, partly owing to the more complete development of the perirenal fascia, and partly owing to the shorter length of the renal vessels. We have to remember also that on the right side the right lobe of the liver occupies a large portion of the hypochondrium. Further, moveable kidney seems to be somewhat uncommon under 20 years of age. It is most frequently met with in patients between 20 and 50 years of age, after which comparatively few cases are seen. It is said by some that moveable kidney is not infrequent in young children, but I cannot say that in my own experience I have come across many cases of real pathological mobility of the kidney, such a degree of mobility, for example, as to allow one to interpose a finger between the organ and the ribs. One may no doubt sometimes feel the lower pole of the kidney when the child breathes deeply. The majority of the cases of moveable kidney in children seem to be associated with the condition of cyclic albuminuria.

Coming now to the conditions which give rise to moveable kidney, a great variety of suggestions have been made. Thus it is not uncommon to attribute the mobility of the kidney to the disappearance of fat from the fatty capsule. It is held by some that the fat surrounding the kidney is an important element in keeping the organ in its place, but it is difficult to believe that semi-fluid fat can have much influence in this respect. Besides, in the real moveable kidney, the range of movement is far beyond the extent of the fatty capsule. And also in wasting diseases and under many conditions in which fat is lost, there is no evidence that there is an increased proportion of moveable kidneys. It is true that in cases of wandering kidney there is often a marked diminution in the amount of fat surrounding the organ, but this seems to be a sequel of the mobility rather than the cause of that condition. And in post-mortem examinations of patients with moveable right kidney, it has been found that the fatty capsule on the other side is quite satisfactorily developed, and often remains considerable in amount, even though the patient be emaciated. Hence the treatment which is so often pursued of putting patients to bed and trying to increase their fat does not seem a very satisfactory plan. Flaccidity of the abdominal wall has also been mentioned, but although that may be an important point in connexion with the troubles which a wandering kidney may produce it is difficult to believe that it is an inciting cause of the trouble, and the fact that the condition is not more frequent in women who have borne children than in others is distinctly against this view. It has also been stated that increase in the size and weight of the organ tends to make it moveable. It may, no doubt, be to some extent true that in the development of a moveable kidney increased weight of the organ may help, but there is no evidence in support of the view that it is an inciting cause.

None of the foregoing explanations can be looked on as sufficiently satisfactory and we are left with two main views: one that mobility of the kidney is, in part at least, a congenital defect and the other that it is due to mechanical causes.

As regards the first point, it is important to remember that moveable kidney is often associated with the condition described by Glénard, and known as enteroptosis or Glénard's disease. In these cases it is part of the general looseness of the abdominal contents and is developed under the same conditions.[1] The degree of enteroptosis present varies much, and even a comparatively slight amount may cause much discomfort. The conditions which lead to the development of Glénard's disease point to a certain extent to a congenital defect, and I cannot but think that in some cases the groundwork of the mobility of the kidney is also of congenital origin. However that may be, I have no doubt that the development of the pathological mobility of the organ is in the main due to mechanical causes which come into play especially during young adult life.

Mechanical causes may be divided into two sets—namely, those which are acute and sudden, and those which act slowly and gradually. As regards the acute conditions, sudden dislocation of the kidney from various causes, such as a fall from a height or rapid bending of the body, are often spoken of. Violent coughing has also been mentioned as a cause, but patients subject to bronchitis do not seem to be specially troubled with mobility of the kidney. A blow in the lumbar region has been said to produce it, and also violent squeezing together of the lower part of the thorax or violent dragging of the abdominal muscles. None of these causes are, however, very definite, and there are very few cases on record in which there has been undoubtedly a sudden dislocation of the kidney. I fancy that in some of these cases, at any rate where we have a history of the sudden development of symptoms which have led to the discovery of a moveable kidney, the kidney has been moveable beforehand without causing symptoms, and that the injury to which the mobility is attributed has bruised the kidney against the ribs, &c., and thus attracted attention to the condition. It is difficult to believe that the ordinary moveable kidney is of sudden occurrence, because we have to account for the abnormal length of the pedicle and of the various fibrous attachments, which, if not congenital, must have taken a considerable time to develop.

Probably the most important causes of moveable kidney are those which act slowly, and of these the chief is no doubt the arrangement of the dress in the female. Two points are of importance in this respect, namely: in the first place the injudicious use of corsets, and in the second place, the way in which the clothing is supported by means of bands tied round the waist. No doubt in cases where real tight-lacing is indulged in the lower ribs tend to be flattened and thus the abdominal contents are driven towards the lower part of the abdomen. But

[1] THE LANCET, April 7th, 1906, p. 947.

where no such tight-lacing is employed the wearing of corsets is rather a protection than otherwise. Without corsets, or with very yielding ones, the bands which keep up the clothing tend to drag down the contents of the abdomen and are undoubtedly a potent cause of Glénard's disease. And when we consider the intimate connexion of the various abdominal organs with one another we can hardly have important organs like the intestines, especially the large intestines, dragging down without pulling on the kidney. This tendency is aggravated in the case of fashionable women by wearing high-heeled shoes, the result being that in walking lordosis of the lumbar spine is produced, the antero-posterior capacity of the abdomen is decreased, and the kidneys are projected from under the protection of the ribs. The result is that the bands tied round the waist act still more markedly in the way of depressing the abdominal organs. Once the kidney has become somewhat loose and passed to some extent from under the protection of the ribs it becomes exposed to injury from these constricting bands, and if they are applied towards the upper part of the organ the kidney is constantly pulled down by the weight of the clothes. The peristalsis of the intestinal coils, especially of the ascending colon, will also pull on the pedicle, and under these circumstances the increased weight of the organ itself will also tell, especially where the abdominal walls are lax. In this way a loose kidney may become transformed into a floating kidney.

On examining the condition of moveable kidney, either during an operation or post mortem, it will be found in the early stage that the mobility is limited to the post-peritoneal region, the organ moving upwards and downwards behind the peritoneum. As the case advances, the kidney may project the peritoneum forward, the posterior surface of which may thus form a pocket in which the organ lies, and the vessels and other structures in the pedicle become gradually stretched and elongated. Further, the kidney tends to become rotated, the lower end coming nearer the middle line than normal, thus pressing on the ureter and interfering with the free outflow of urine. This is most marked when the mobility is not great. As the kidney becomes looser the trouble arising from this cause diminishes.

Coming now to the second point—namely, the effect of this mobility on the kidney—we may say that in the majority of cases the substance of the organ does not undergo any marked alteration. Not infrequently, however, the wandering organ becomes small and atrophic, while on the other side compensatory hypertrophy takes place. In some cases there is dilatation of the pelvis of the kidney, in fact a hydronephrosis, which may be accompanied with kinking or twisting of the ureter, and gives rise to the condition known as intermittent hydronephrosis. We may also find in wandering kidneys a condition of chronic nephritis, along with fatty degeneration of the epithelium. In the later stages the kidney may become adherent to structures in the neighbourhood. Trouble of the gall-bladder such as gall-stones is also not infrequent. The stomach is at times markedly dilated and may either be in its normal position or the pylorus may be dragged downwards. The duodenum and the colon may also be dilated, and it is not uncommon to find a condition of general enteroptosis.

In the third place, I may refer shortly to the symptoms to which this condition may give rise. Very often they are indefinite, such as giddiness, faintness, tiredness, and sometimes also anæmia and palpitation. The patients are frequently hypochondriac, neurasthenic, and hysterical, and, according to Suckling, moveable kidney may lead to insanity. Neuralgic symptoms are not uncommon and there is frequently dull pain in the loin, which diminishes when the patient is recumbent but becomes more marked when she is in the upright position, and especially when lifting heavy weights. From the loins the pain spreads in various directions, while on the other hand one may find anæsthetic areas. A second group of symptoms are due to the involvement of the intestinal tract. As regards the stomach, the patients complain of a feeling of weight and fulness, loss of appetite, frequent eructation, and sometimes troublesome vomiting. These symptoms are partly reflex, and may indeed be produced by pressure on the lower pole, even in a kidney which has been fixed. Dilatation of the stomach is also not uncommon and has been explained by actual pressure of the kidney on the first part of the duodenum. But this is not likely, because when in a recumbent position the kidney falls outwards. Jaundice may also occur from moveable kidney, as the result of pressing or dragging on the common duct, as it comes in contact with the duodenum. Usually there is a tendency to constipation.

Various symptoms may also arise from twisting or obstruction of the pedicle. The patient may be seized with sudden pain, hæmaturia, small pulse, shock, rigors, &c., or symptoms not unlike strangulated hernia or renal calculus may occur. This condition may last for 24 hours and then gradually subside. The kidney is enlarged and tender, the urine increases in amount as the symptoms subside, and contains albumin and numerous white corpuscles. These symptoms are due to kinking or twisting of the vessels in the pedicle, leading to rapidly increasing swelling, with pain, tension of the capsule, diminution of the secretion, and admixture of blood with the urine. In other cases it is the ureter which is kinked, leading to attacks of intermittent hydronephrosis.

Coming now to the treatment of these conditions, we have two lines of treatment—one operative and the other non-operative. As regards the latter, the treatment consists essentially in attending to the general health and condition and relieving, as far as possible, any of the symptoms which may be present. In addition to that, attempts are made to fix the kidney, either by increasing the fat of the patient, a plan which seems to be quite futile and not in accordance with the pathology of the disease, or by the application of various forms of apparatus, with the view of preventing the kidney from dropping. The latter consist of belts with pads or springs, so arranged as to press on the abdomen below the level of the kidney, the hope being that in this way the kidney will be prevented from descending. It is, however, but rarely, especially with a strongly developed abdominal wall, that these pads fulfil their purpose. To be efficient they must be applied while the patient is in the recumbent position, but as soon as she begins to assume the erect position the muscles lift up the pad and the kidney is apt to escape, and either lies under the pad, in which case it becomes subject to injurious pressure, or gets below the pad, which then prevents it from returning from the loin. The best form of apparatus is, in my experience, specially constructed corsets, such as those used in the treatment of Glénard's disease, which keep up the whole contents of the abdomen. They may be reinforced by an air-pad in the right iliac fossa and are put on in the recumbent position.

The failure of these various attempts has led surgeons to consider the possibility of fixing the kidney in its normal position by means of operation, but, as I hinted at the beginning of this lecture, such attempts meet with considerable opposition, because they very often fail to attain their purpose. The first cause of failure is want of selection of suitable cases. In this condition one must be very careful in choosing suitable cases for operation, because the kidney is often not the sole, or indeed the chief, cause of the patient's troubles, and also the condition is frequently associated with a large amount of neurasthenia.

As regards the cases which require operation, we may say at once that cases where harm is being done—for example, where the pedicle frequently becomes kinked, or where the condition of intermittent hydronephrosis has set in, or where there is injurious pressure on the duodenum or common bile duct—must be treated by operation. And again, certain cases are suitable for operation where the symptoms are less severe and where they mainly consist of pain in the back when the patient is in the upright position, provided they are not associated with general enteroptosis.

There are two classes of cases, on the other hand, in which the question of operation is, to say the least, doubtful. In the first place, moveable kidney is not infrequently associated with a greater or less degree of enteroptosis. Where this is marked the fixation of the kidney is not likely to produce much, if any, benefit unless it is accompanied or followed by some attempt to raise the other organs which have also dropped, and that means extensive operations, the success of which is by no means certain. Hence, in such cases it seems the most prudent course to see what amount of benefit can be obtained by properly constructed and fitted corsets and pads before considering the question of operation.

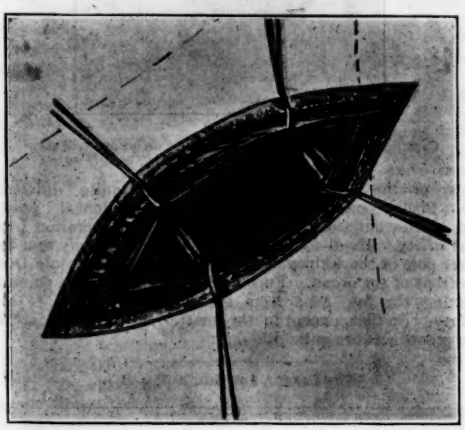
The other set of cases in which operation is of very doubtful benefit is where the condition is accompanied with

marked neurasthenia. The general experience is that in these cases not only may no benefit result but the state of the patient may be rendered worse. I have certainly come across a good many cases, especially in hospital practice, where this is the case. At the same time, it must be pointed out that in all these cases the operation has been done from behind, and, as I shall presently mention, it is by no means easy to fix the kidney in its proper position by that method. In contrast to this view, which is the one commonly accepted, there are some who hold that the presence of neurasthenia is, in fact, an indication for operation, and one of the strongest advocates of that view is Dr. C. W. Suckling of Birmingham. Indeed, Dr. Suckling goes further, and looks on moveable kidney as a potent cause of some forms of insanity, and he publishes a series of cases in which the mental condition has improved after the kidney has been properly fixed. In connexion with his statements the operation to which he refers is Goelet's, in which, no doubt, a more accurate position is obtained than by the ordinary posterior method. It is possible, therefore, that this question of operation in marked neurasthenic cases may have to be revised in future. However that may be, the view taken by many physicians that the operation of nephropexy is not a proper procedure, and that the only treatment for moveable kidney is general treatment, such as rest cures, &c., combined with support by belts and pads, is much too extreme. There is no question that a considerable proportion of cases are immensely improved by the operation when it is properly performed and when the organ is fixed in its normal position and relieved from pressure by bands, clothing, &c.

Another reason for want of success of the operation of nephropexy is the fact that the kidney may again become loose and there is no doubt that in the earlier operations this did occur not infrequently, especially where the kidney was not brought into actual contact with the fascia on the posterior wall of the abdomen. Since, however, care has been taken in this direction, and especially where the capsule of the kidney is detached on the posterior surface of the organ, the probability of its becoming loose again is very much less.

The third point, and the one to which I wish especially to draw attention to-night, is the importance of fixing the

FIG. 1.

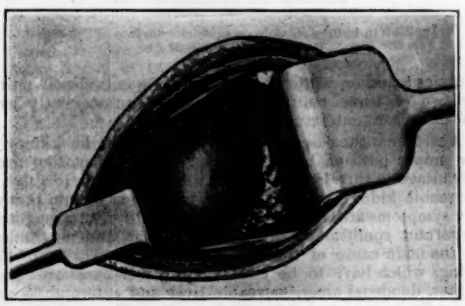


Incision down to transversalis fascia. External oblique divided and internal oblique and transversalis muscles retracted.

kidney, as far as possible, in its normal position, and thus avoiding outside pressure and kinking of the ureter or pedicle. The usual method of performing the operation is by means of a lumbar incision, but I have for some time been dissatisfied with this procedure, chiefly because I have found it very difficult to get the kidney into its normal position. The tendency is to fix it too low down and too far away from the spine, and I have therefore devised an operation which I think enables one to fix the organ in its proper position and which, so far, has given very excellent results.

The following are the details of this operation. The patient lies on the back with a small pillow under the loin, projecting it slightly forward: it is not necessary to push the lumbar region very far forward. An incision is then made along the edge of the ribs and an inch below them, beginning about the edge of the latissimus dorsi, or practically just where, looking down on the patient, the anterior surface of the abdomen ends, and from this point it is carried forwards parallel to the edge of the ribs for from 3 to 4 inches. It is well to make the incision short in the first instance and it can be subsequently lengthened if necessary. The skin and fascia are then divided and also the external oblique muscle; the internal oblique and transversalis muscles can be partly separated and partly divided. They only require a little division here and there, and any nerves that are crossing can, as a rule, be pulled out of the way. One then comes down on the transversalis fascia (see Fig. 1). The fascia is not divided but is pushed towards the middle line, the peritoneum, fascia, and kidney being thus carried forward together. In this way there is less risk of tearing the peritoneum, and we also get at once to the posterior surface of the kidney, which can be easily felt. The edges of the wound being well retracted and the fascia and peritoneum being held well towards the middle line, and the kidney being fixed by the assistant's hand placed in front of the abdomen, the outline of the kidney can be readily palpated. A hole is now made in the perirenal fascia over the posterior part of the kidney, and the renal fat will at once protrude. This hole can now be enlarged vertically over the posterior surface of the kidney, and the fat being pushed outwards or removed the posterior surface of the kidney is exposed. The renal fat is then partly removed and partly pulled forwards with the perirenal fascia (Fig. 2), and the kidney is gradually

FIG. 2.



Perirenal capsule pulled forwards and kidney exposed. About one-half size.

shelled out and can be readily brought out of the wound. The posterior part of the wound is then thoroughly cleared from fat till the diaphragm, the psoas, and the quadratus lumborum muscles are fully exposed. The fatty capsule and the posterior part of the renal capsule are thoroughly turned aside, and I think it is well to take away a good deal of the fat in case it should get in between the kidney and the muscles and prevent firm adhesion. The kidney is then turned forwards and incisions are made through the capsule on the posterior surface, as shown in the diagram (Fig. 3)—namely, a vertical incision running upwards near the inner side of the posterior surface and curving outwards at the upper part towards the upper and inner part of the posterior surface, and then a transverse incision running across the kidney at the lower end of this vertical incision. The capsule can then be stripped off as far as the convex border of the kidney. From each end of the lower transverse incision a small vertical incision is made through the capsule, and then this portion can be pulled down so as to hang downwards from the lower pole of the kidney (Fig. 4). The fatty capsule and loose fascia being prevented from getting in between the kidney and the posterior muscles, the kidney can now be turned back and placed exactly in the position which is desired; it can be put up as far as one wishes, and also at the proper distance from the spine. By means of strong catgut or silk

stitches the vertical piece of capsule is now stitched down to the muscles behind, taking care not to stitch it too tightly, because the natural tendency of the kidney is for the outer border not to be so closely in contact with the posterior wall of the abdomen as the inner border is. The piece of capsule which is hanging down from the lower pole is then stitched to the muscles below the kidney, and in this way the raw surface of the kidney is kept in contact with the surface of the muscles behind and acquires firm adhesion to them. The capsule at the lower part is strengthened by stitching down the detached portion of the renal capsule so as to form a sort of ledge on which the kidney rests. The kidney having been fixed, the peritoneum is then allowed to fall back into position and a few stitches will generally bring the deeper

FIG. 3.

Incision in kidney capsule on posterior surface of the organ. Rather under one-half size.

muscles together, while the external oblique is closely united by two or three mattress sutures and subsequently by a continuous catgut suture.

Apart from the ease with which one can fix the kidney in its proper position by this operation, there is another great advantage in this incision. Everyone is familiar in cases of moveable kidney with the difficulty of being certain that all the symptoms are entirely due to that mobility, and that other important conditions are not also present, and may indeed be the main cause of the patient's trouble. The four chief things which have to be considered in such cases are: gall-stones, duodenal ulcer, moveable liver and enteroptosis, and appendix trouble, and it is not always easy to say whether the symptoms are due to moveable kidney or to one or other of these conditions.

Now, with the ordinary lumbar incision one cannot as a rule make any investigation of the condition of these other parts, but with the incision which I have described it is quite easy to do so. By making an incision into the peritoneal cavity after having exposed the kidney, one can ascertain the condition of the various parts to which I have referred. A moveable liver, of course, is evident at once, even before the peritoneum is opened, and by extending the incision another inch or so forwards one can ascertain the condition of the gall-bladder and of the duodenum. In many of these cases also the colon is so moveable that one can pull up the cæcum and examine the condition of the appendix, or at any rate in trying to do so can ascertain whether adhesions are present or not, which are binding the cæcum down. And not only can these conditions be diagnosed, but some of them can also be remedied without making a further incision. For example, it is, of course, quite easy to stitch the liver up to the edge of the ribs so as to obtain adhesion between that organ and the diaphragm. And also, as in most of the cases of enteroptosis the hepatic flexure of the colon is practically non-existent, the colon can be fixed up to the under surface of the liver at the same time. And then the various conditions in connexion with the gall-bladder are quite accessible by extending the incision somewhat forwards.

As regards the duodenum, of course if it is necessary to do an anastomosis a separate incision will be required, but in all probability that would be left to another day, and in the meantime the exact state of matters has been made out. Similarly with regard to the appendix, if it is bound down by adhesions in the iliac fossa a separate incision will be advisable, and that can be done at the same time and before the upper opening in the peritoneum has been closed, so that one has the advantage of a double access to the appendix.

I have now performed this operation in a good many cases, and the more I do it the more I am satisfied with the results. One leaves the operation with the feeling that the kidney has been put in the proper position, whereas I have always been doubtful when the operation was done by the posterior incision. Where, however, we have the condition of intermittent hydronephrosis present and have to perform some plastic operation on the ureter,[2] I think that the old oblique posterior incision is more useful; one gets a more direct access to the pelvis of the kidney by it than by the incision which I am recommending. But these cases are not very common and the condition is usually diagnosed before proceeding to the operation.

This operation was devised some time ago, but I see that in THE LANCET of August 3rd, 1907, p. 283, Mr. E. Stanmore Bishop has described an incision which is practically the same as in the above operation. The further

FIG. 4.

Capsule stripped from kidney. Rather under one-half size.

steps of the operation are, however, quite different. Mr. Bishop cuts directly into the peritoneal cavity and carries out the remaining steps of the operation from that cavity. He divides the peritoneum transversely over the lower pole of the kidney and strips down the capsule from the front of the organ. Further, he does not make a point of clearing the fat, &c., from the posterior surface of the kidney. So that, except in the matter of the incision, the two procedures are quite different.

[2] THE LANCET, July 6th, 1907, p. 11.

NATIONAL LEAGUE FOR PHYSICAL EDUCATION AND IMPROVEMENT.—The Lord Mayor will preside at a meeting on behalf of the National League for Physical Education and Improvement at the Mansion House, at 4 P.M., on Wednesday, April 28th. The Bishop of Ripon, Lord Ashbourne, and Lord Halsbury will also address the meeting, and there will probably be other distinguished speakers. The meeting is to call attention to the work of the League and to emphasise the necessity for improving the physical welfare of the nation, whether for purposes of defence or of commercial prosperity. Application for tickets should be made to the secretary of the League, 11, Southampton-row, London, W.C.

Lumleian Lectures

RHEUMATIC FEVER AND VALVULAR DISEASE.

Delivered before the Royal College of Physicians of London on March 23rd, 25th, and 30th, 1909,

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LECTURE I.

Delivered on March 23rd.

THE CLINICAL ASPECT OF RHEUMATIC FEVER.

MR. PRESIDENT, CENSORS, AND FELLOWS OF THE COLLEGE,—The learned person after whom the lectureship is named, to which you have been pleased to appoint me, inherited his estate from a grandfather who fought at Flodden Field. He was himself educated at Queen's College, Cambridge, where he entered in May, 1549, and he retained a taste for learning throughout a long life, in which, as Lord Lumley, he took an active part in the dangerous politics of the time. His wife, a daughter of the twelfth Earl of Arundel, was as well read as her husband, and among their learned friends was Dr. Richard Caldwell, an Oxonian, sometime President of our College, who with Lord Lumley founded this lectureship in 1581. The fine books which belonged to Lord and Lady Lumley are evidence of their learned tastes, and were purchased at our benefactor's death for Henry, Prince of Wales. They are preserved in the Royal Library in the British Museum.

It seemed proper in expressing my own gratitude to the College to mention our debt to the founders of this lectureship, but I will not say more of their merits or achievements lest you should feel as did King James I. on April 13th, 1603, when the Dean of Durham at Lumley Castle addressed him so elaborately on the history of the family that he grew tired and called out, "Oh! man, gang na further; let me digest the knowledge I have gained, for I did na ken Adam's name was Lumley."[1]

Rheumatic fever, on which I propose to lecture, is so common a disease that every physician has seen very many examples of it, yet its natural history is still obscure in several directions. Its name takes us back to a pathology long anterior to the revival of learning, and acute rheumatism, the commonest synonym for that name, indicates a pathological confusion not wholly dispelled from the medical thought of our own day. How little consideration had been given to the subject for many centuries is shown by the fact that the Aphorisms of Boerhaave, the elaborate summary of the whole medical teaching of the greatest medical teacher of his time, which were printed at Leyden in 1709, do not mention any of the numerous conditions to which the term "rheumatism" has been applied. Boerhaave was professor at Leyden, a city where the frequent chimes seem perpetually to remind one of the heroic conduct of its citizens in the defence of their liberties and of their noble choice of a University as the reward of their valour. His lucid teaching, his unremitting study, his vast learning, his delightful conversation, and his universal kindness made him the object of the respect and the admiration of many generations of students from every part of Europe. One of these, Gerard van Swieten, whom religious intolerance drove from Leyden to Vienna, where he became the most distinguished physician in the empire of Maria Teresa, published a famous commentary on the Aphorisms of Boerhaave which began to appear in 1741, and is to this day the best book for any man to read who desires to ascertain the state of the knowledge of medicine in the middle of the eighteenth century. Van Swieten, in the commentary on the 1490th aphorism of his teacher—"There is a disease allied to the arthritis, gout and scurvy, which is very common, and is called the Rheumatism"—relates that this subject was first treated in the third edition of the Aphorisms, published in 1722. It "was now mentioned because Boerhaave had himself that year suffered excruciating tortures from this disorder. ..... As long as he had the care of the botanical garden he was constantly there before sunrise; not only in the summer but in the spring and autumn seasons, that he might prepare everything ready for his academic lecture, which he read at 7 o'clock in the morning. I well remember that in the year 1721 he suffered rheumatic pains in his scapula and neck, which were exceedingly troublesome, as in one of the hottest summers he gave advice to a vast concourse of people, in a very cold part of the house in which he lived, not so warmly clad as was requisite: but in a short time after the disorder gave way; but the following year it returned with the greatest violence. ..... When he was well and spoke before his scholars concerning the Rheumatism, about the end of June in the following year, he said for near three months he had endured the most excruciating tortures and at length was so relaxed, that no motion, and scarce any sensation, remained in his lower limbs. He added that, as soon as the pain remitted, he began to run over in his mind all the authors, both ancient and modern, that he had read; for the attention to his own pains excited him: but at the same time he remarked, he had not found anything of consequence in any, excepting Sydenham. ..... Under this name (Rheumatism) he every year described to his pupils the malady he suffered." Thus the malady of Boerhaave, whatever may have been its true pathological species, was the cause of the introduction of a chapter on rheumatism into every subsequent general treatise on medicine.

Sydenham's remarks on rheumatism prove that he had recognised rheumatic fever, and he is, I believe, the first physician who did so and deserves to be regarded as the discoverer of the disease, though parts of his account show that, like all subsequent writers on the subject, he did not precisely define it nor always distinguish its pains from others of different origin. His description of the symptoms is clear and nothing of the kind is to be found in any earlier writer. He says: "It begins with shivering and shaking and presently heat, restlessness, and thirst, and other symptoms follow, which accompany a fever. After a day or two, and sometimes sooner, the patient is troubled with a violent pain, sometimes in this, sometimes in that joint, in the wrists and shoulders, but most commonly in the knees: it now and then changes place and seizes elsewhere, leaving some redness and swelling in the part it last possessed. At first for some days the fever and the symptoms above mentioned happen sometimes together; but the fever goes off by degrees, the pains remaining, and sometimes rage violently. ..... It may be asked why medical authors have not touched upon it, unless it be supposed this is a new disease. However it be, it is frequent enough now, and though it seldom kills anyone when the fever is off, yet upon the account of the violence of the pain, and the continuance of it, it is not contemptible." Another sentence of Sydenham—"When this disease is not accompanied with a fever, it is often taken for the gout, though it differs essentially from that, as plainly appears to anyone that well considers both these diseases"—probably suggested the writing of a classical passage in the "Commentaries on Diseases," published in 1802, of the Dr. William Heberden whose portrait in extreme age is in our Censors' room. Heberden, in this passage, gives the distinguishing characteristics of gout and then says: "These appear to me to be the marks of the genuine gout, in almost every one of which it differs from what I would call the rheumatism. For this does not begin in the foot preferably to any other part, and it seldom continues long in the same place, but will be perpetually wandering over the whole body, even during the first fit, which has been known to last for several months. Rheumatic pains will come on suddenly and without any preparatory symptoms. In rheumatisms the chief pain arises from moving the part affected, which while at rest gives for the most part rather the sensation of lassitude, than of anguish and torture. The discolouring of the skin if there be any is not a deep red but rather a faint blush. A severe fit of the rheumatism often happens without ever returning throughout a very long life, and hardly ever makes periodical returns like the gout. Rheumatic pains very rarely desert the muscles and joints to seize upon the vital parts. Very young children will labour under violent rheumatisms; and particularly those who have in them by inheritance the seeds

[1] Stow's Chronicle.

of a gout, with which they are to be afflicted when they arrive at manhood. These are according to my judgement the principal characters of the two distempers; but it must be owned that there are cases, in which the criteria of both are so blended together, that it is not easy to determine whether the pains be gout or rheumatism."

That children are attacked by acute rheumatism is almost the only addition made to the description of Sydenham by the observant Heberden, while his general definition of the disease is less precise than that of Sydenham. It was certainly this admirably drawn contrast of Heberden's which suggested a similar passage in the writings of Sir Thomas Watson, whose medical knowledge and pleasant style caused his book to be widely read and often republished: "In gout the small joints are first and chiefly affected, especially the joint of the great toe; in rheumatism the large. The redness of the gouty inflammation is more bright and vivid than that of the rheumatic; and the fluctuations between agony and ease are more complete and more frequent. Gout usually affects one joint only at a time: Rheumatism usually several at once. The inflammation in Gout is attended with turgid veins and with more œdema than in Rheumatism; and is followed, in the majority of instances, by desquamation and itching, phenomena which we do not notice at the close of rheumatic inflammation. Gout is not attended with those drenching acid sweats which are so characteristic of acute fibrous rheumatism. The gout is decidedly hereditary: rheumatism though probably hereditary too is much less distinctly so. The gout occurs rarely or never, whereas rheumatism is not very uncommon before the age of puberty. In gout though many functions suffer, and especially the digestive functions, there is no tendency to carditis: in rheumatism with far less general disturbance, but more fever, that tendency is very well marked. Gout is often, rheumatism is never, associated with chalk stones."

These connected passages from the writings of the three great English masters of medical description—Sydenham, who wrote in the time of Dryden; Heberden, who was a contemporary of Johnson; and Watson, whose last entrance to our Comitia, when the whole College stood up to show him respect, I can remember—all contain confusions from which the expressions of more modern physicians are not wholly free. Sydenham's account, at first clear and admirably describing rheumatic fever, goes on to associate it with quite different conditions, as he also does in his account of the case of the apothecary Malthus in his Epistle to Dr. Brady on the Epidemical Diseases from the year 1675 to the year 1680. Heberden's clinical distinctions show that what Sydenham thought might perhaps be a new disease had not at the end of another century become perfectly familiar to physicians. Watson alone mentions the "tendency to carditis" which had first been observed by Dr. David Pitcairn, who taught at St. Bartholomew's Hospital, to which he was physician from 1780 to 1793, that valvular disease was a frequent result of rheumatic fever.

The history of the attainment of exact knowledge about each particular disease is generally that some prominent symptom has first been noticed and has long been assumed to be the whole disease, and that progressive observation has gradually demonstrated that this prominent symptom may be a result of several distinct morbid conditions. Thus the single disease of past generations of medical authorities comes to be divided into a number of diseases. These for a time continue to be spoken of as if they were related conditions, and finally the partial relation of some and the absolute distinctness of others come to be recognised. The wide meaning of the original term is forgotten and it is applied in some different way or less often falls into disuse. It is easy, for example, to recognise in old writers under the heading "Asthma" cases of some forms of tuberculosis of the lungs, of emphysema, of fibrinous bronchitis, and of laryngismus stridulus, and under that of "Diabetes" of chronic interstitial nephritis as well as of the group of pathological conditions now included under that general designation. The term "rheumatism" is at present undergoing this process. "And rheumatism I send to rack the joints" is a line of Dryden quoted by Johnson in his dictionary, and shows the general sense attached to the term since the poet's time. Physicians were very little more particular and were content to say with Heberden: "The rheumatism is a common name for many aches and pains, which have yet got no peculiar appellation though owing to very different causes." From this general statement the terms "chronic rheumatism" and "acute rheumatism" became fixed in use, and this terminology, added to certain misunderstood phenomena, led to the view still prevalent among the public, and not always rejected by practitioners of medicine, that the pains common in the muscles and joints of the aged and continuing with intervals for years are a long lasting form of the fever with swelling and pains in the joints which occurs in attacks of a few weeks' or days' duration in the young. The morbid anatomy of these two groups of cases is sufficient to demonstrate their absolute difference. In what is called chronic rheumatism well-marked arthritic changes are found, such as bony induration, ankylosis, degeneration or destruction of cartilage, while permanent morbid changes in joints form no part of the post-mortem appearances of acute rheumatism, as these may be studied in those patients whose death has been due to the consequences of valvular disease in the first half of life. It is clear from this evidence that the several forms of chronic arthritis have no relation to rheumatic fever. Since it is desirable to avoid the suggestion of any pathological relation to chronic rheumatism the term "acute rheumatism" should fall out of use and the words "rheumatic fever" be invariably employed.

Various forms of septic arthritis, of which gonorrhœal rheumatism is one, are imperfectly distinguished from this condition on the side of arthritis, while on the side of endocarditis several conditions due to ascertainable bacilli are no doubt sometimes placed under the heading of "Rheumatic Fever." I shall venture to consider some of these conditions without relation to bacteriology which at present fails to give that precise guidance which it is likely in future times to offer and without the confirmation of which, clinical determinations can only be regarded as approximate.

In the attempt to define clearly rheumatic fever it is necessary first to consider two diseases which are sometimes confused with it: gonorrhœal rheumatism and progressive destructive endocarditis, often called "malignant endocarditis" or "ulcerative endocarditis."

The close relation in time to scarlet fever which exists as regards the arthritis and endocarditis which sometimes appear in that disease makes it unnecessary from the clinical point of view to discuss its differentiation from rheumatic fever. It would promote clear understanding if the arthritis which sometimes follows a proved urethral growth of gonococcus were included under the general heading of "Gonorrhœa," a term sufficiently expressing that infection, and if the name "gonorrhœal rheumatism" were to be altogether disused. Before the modern improvements in surgery which have made cases of pyæmia very rare it was possible to see in the post-mortem room the body of some patient with a suppurating operation wound, several of whose joints and perhaps his pericardium contained pus. This condition of pyæmia is the type of what occurs when an arthritis succeeds the onset and accompanies the progress of a gonorrhœa. The centre of infection in the body in such a case is the urethra, and if the heart should be affected, as it occasionally is in the endocardium or pericardium or both, the source of the organisms which infect it is the urethra just as the suppurating wound is the centre of infection and the source of the arthritis in pyæmia. The observation which in my experience may be made in every such case of complicated gonorrhœa, that the arthritis is never cured while any urethritis remains, shows that the gonococci in the urethra are the stock whence those of the joints are derived. The comparative rarity of endocarditis in such cases shows that the endocardium, like a joint, must be regarded as a point on the periphery of the infected circle, of which the centre is the urethra. This arthritis in gonorrhœa might generally be distinguished from rheumatic fever, quite apart from discovery of the urethritis, and its true nature may safely be conjectured from clinical observations, though the patient have no urethral pain and only an occasional urethral discharge, or one in which the presence of the gonococcus has not been demonstrated. The swelling and tenderness are not confined to joints or even to their immediate neighbourhood, but are spread in the line of tendons or over the area of aponeuroses and fascia. The plantar fascia is very often affected. There is a sense of stiffness in the affected joints and both this stiffness and the pains last longer than in rheumatic fever. Endocarditis is not a

necessary part of the disease and, as a rule, no physical signs indicating it are present. Permanent damage to a joint often seems about to occur and sometimes does occur.

Out of 11 cases under my care at St. Bartholomew's Hospital during the years 1903 to 1907 the plantar fascia was painful in four, and large areas of the calf and forearm in two others, in addition to the arthritis of particular joints. Marked stiffness was present in seven and led to rigidity of the wrist-joint in one. A raised temperature persisted for three weeks or more in five of the cases without signs of any pleurisy or pericarditis. In one case there was on admission disease of the mitral valve causing regurgitation and in this case pleurisy also occurred during the illness. In the other 10 there were no signs of endocarditis throughout the illness. Permanent damage to joints took place in six cases, slight in five, and accompanied by extensive ankylosis in one. The whole aspect of the disease is seen to be entirely different from that of rheumatic fever in the duration and character of the pains as well as to some extent in their locality, and in the absence of infection of the endocardium and the frequency of permanent damage to joints. The temperature chart is not the same as that of rheumatic fever which is under treatment by salicylates. This difference may be stated briefly by saying that the approach to the line of 100° is generally more frequent during the first three weeks and is more often continued into several weeks than in rheumatic fever.

The clinical distinction of ulcerative endocarditis from rheumatic fever is sometimes difficult, and most observers have, I should think, long remained in doubt whether they have before them two distinct diseases or merely varying results of the same infection. The bacteriological evidence does not at present solve the problem. The two diseases, however, may generally be distinguished by clinical observations. In a case of ulcerative endocarditis the patient is often remarkably contented or even cheerful and has not the pained position and expression common in cases of rheumatic fever till the pain is relieved. This frame of mind, a sort of settled good temper, quite different from the optimistic mental state seen in patients with tuberculosis, is well marked in a little girl now in one of my wards who has been there since July, 1908, and who, in spite of high temperature and prolonged illness, is invariably placid and uncomplaining. The joints are in most cases of ulcerative endocarditis free from pain and from swelling. Out of nine cases under my care no joint pain existed in seven. The temperature chart, however long the disease may last, always shows high temperatures, usually every day, always for most days of each week. In some cases the temperature reaches 104° F. often; but in others 103° or 102° is the highest point, and in either case this high degree is reached again and again. Sometimes no cardiac murmurs are heard, more often they are plain and vary a little from week to week. Evidence of emboli, such as enlarged spleen, hæmaturia, or hemiplegia, is often observable, while the arteries of a limb are sometimes blocked or acute aneurysms appear on them or on other vessels. The illness may go on for a very long time, but the patient never recovers. Sometimes it is clear that the patient has had rheumatic fever and had a heart damaged by that disease before the ulcerative endocarditis began. Out of the nine patients above mentioned four had had rheumatic fever years before, and one had a heart which had probably been damaged in relation to scarlet fever. These symptoms, therefore, make it possible to distinguish a case of ulcerative endocarditis from one of rheumatic fever. It may be added that treatment by salicylates is without any effect on the symptoms or temperature chart of ulcerative endocarditis. My conclusion, from a clinical point of view, is that rheumatic fever is a distinguishable disease of different origin from the other morbid conditions which include arthritis amongst their symptoms.

The cardinal features of rheumatic fever are endocarditis and arthritis. Endocarditis is always present. In most cases, but not in all, it produces some permanent alteration in one or more valves. This endocarditis of rheumatic fever is the chief cause of the varieties of valvular disease met with in patients under 30 years of age. If the heart in a slight case is only auscultated at the beginning and end of the disease the sounds may sometimes seem to be unaltered and it may be assumed that they have been normal throughout; but if the heart is examined daily changes in its sounds will, in my experience, always be discovered, which, taken with the evidence of the frequency of definite valvular disease as a result of rheumatic fever and with the frequency of a history of rheumatic fever in cases of valvular disease belonging to the first half of life, justify the belief that these variations in sound may be taken as evidence of the presence of endocarditis, even though no permanent valvular lesion be produced.

Out of one hundred cases of rheumatic fever under my care in St. Bartholomew's Hospital murmurs indicating valvular disease were distinct in all but one. In the solitary exception, that of a man, aged 24 years, who had first had rheumatic fever the year before that in which I saw him, pericarditis was present with a very loud friction sound which may have obscured an endocardial murmur. The friction sound remained after the fever had disappeared and I was never able to hear any murmur. Many of the patients gave a history of previous attacks, some of them certainly were in their first attack. The slight degree of arthritis which is sometimes present in a first attack of rheumatic fever in a child often leads to its non-recognition by a parent and patients who are suffering from the disease later in life and who have suffered from it more than once before—a very common case—are often found to be very inaccurate in fixing the date. When a child with rheumatic fever is said never to have had an attack before, but is said to have had chorea a year before, it will be far more often true that another attack of rheumatic fever preceded the chorea than that the existing attack is the first one. A patient of the age of 28 years may easily remember an illness of childhood in which he was confined to bed with severe pains in the joints, but slighter attacks of pain are easily forgotten. Every man has his own memory by which to test the powers of memory possessed by others. The recollection of physical pain and of slight illness is especially transitory. Few pains are more severe than that of toothache, but who can mention the dates in his life or even the years in which he had toothache? Even when an event is impressed upon the mind by some special act in relation to ourselves its precise date is rarely remembered even by highly trained minds. The Fellows of this College each receive half-a-crown in the College on the Monday after Palm Sunday, but how many of them could write down on what day of the month those Mondays were or who on each particular occasion sat to their right hand and their left in the Comitia? We generally expect too much from the memory of our patients. I have therefore not attempted to say how many of these one hundred patients with rheumatic fever were suffering from their first attack. 63 were males and 37 were females. As regards age they were thus distributed:—

63 Males.

To 5 years	1	To 25 years	5
,, 10 ,,	14	,, 30 ,,	4
,, 15 ,,	20	,, 35 ,,	3
,, 20 ,,	13	,, 40 ,,	3

37 Females.

To 5 years	3	To 25 years	5
,, 10 ,,	4	,, 30 ,,	4
,, 15 ,,	10	,, 35 ,,	3
,, 20 ,,	7	,, 40 ,,	1

In 44 males and 29 females the mitral valve alone was affected; in nine cases, all of males, the aortic valves alone were affected; in eight males and eight females both the mitral and the aortic valves were affected; in one male the pulmonary and aortic valves were affected; and in one case, as already mentioned, a very loud friction sound made it impossible to determine the presence or absence of valvular disease. In seven other cases, in all of which the mitral valve only was affected, pericarditis was present, so that pericarditis occurred in only 8 per cent. of the whole. The question of whether endocarditis or pericarditis was the more common in rheumatic fever was frequently discussed by the generation which flourished between 1830 and 1860, but at the present day the reply must be that while pericarditis is a somewhat rare incident of the disease there is evidence of endocarditis in every case.

Taking the history of 100 cases of valvular disease lately under my care in which the patients were of the age of 30 years or less, 60 gave a distinct history of rheumatic fever, and in 100 cases in which the patients were over 30 years of age, 46 gave a history of rheumatic fever These 200

patients were none of them included in the 100 cases of rheumatic fever mentioned above. The 200 cases show the frequent occurrence of rheumatic fever as a cause of endocarditis. It is probably correct to say that three-fourths of the cases of valvular disease which are seen in patients under 30 began in the endocarditis of rheumatic fever, and that half of the cases of valvular disease in patients over 30 began in the same disease. The 100 cases may be taken as proving that endocarditis is invariably present in rheumatic fever. It must be regarded as the central condition in the disease. If no evidence of endocarditis is to be found throughout an illness of which a symptom is arthritic pain then that illness is not rheumatic fever, and the arthritis has some other cause.

Sir William Selby Church, one of the latest writers on rheumatic fever, does not believe that endocarditis is invariably present. "It is difficult," he says, "perhaps impossible, to determine during an attack when endocarditis begins, for it gives rise to no special symptoms, but in a large majority of cases if no endocardial murmur be present during the first ten days of an attack the endocardium escapes." This is certainly the prevalent view, but my own observations lead me to a different conclusion. I have found that in every case of first attack of rheumatic fever the presence and sometimes onset of endocarditis may be inferred from the alterations in the heart sounds. In later attacks where valvular disease with a loud murmur or murmurs existed before the onset of the arthritis, minute differences of sound are less easily detected, but progressive alterations in the valves as well as, in many cases, diurnal or weekly alterations of sound, with rises of temperature after arthritic changes have ceased, satisfy the observer that endocarditis is present.

The deepest symptoms of rheumatic fever are alterations of the heart sounds and can only be discovered by a trained observer. The most obvious are pains in the joints accompanied by swelling and often by redness of the skin over them. The patient himself is distressed by the pain and anyone at his bedside may see the swellings or the redness. This part of the disease is matter of common knowledge, while detection of the endocarditis belongs to the arcana of medicine, discoverable only by a skilled method of observation and a trained sense of hearing. This prominence of the external over the internal symptoms was still more marked when, owing to the want of any remedial drug, the pains lasted for more days than they do at present, and at the same time the practice of auscultation was less assiduously pursued than it now is. The well-known fact that the size or number of the joints affected has no direct relation to either the severity of the endocarditis or to the seriousness of the consequent valvular disease supports the view that the endocarditis is the primary lesion in rheumatic fever.

The point of entrance of the organism which seems likely to exist, though its presence has not been proved, has sometimes been suggested to be the tonsils. A slight degree of sore-throat and sometimes a severe angina faucium may be present at the beginning of an attack of rheumatic fever, but is not found sufficiently often to justify the belief that swollen tonsils are the first anatomical change of the disease and that it is through them that the organism enters the system.

The common expression that the pain flies from one joint to another—say, from the left ankle to the right knee—is, of course, merely a relic of the Hippocratic doctrine of metastasis. When an empyema[2] succeeded a pneumonia, or an obvious pleurisy was followed by a pneumonia, the Hippocratic school held that one disease had been converted into another, and thus it was easy for them to regard an inflamed ankle on one side as converted into an inflamed knee on the other. This form of words belonging to an obsolete doctrine ought at the present day to be avoided in teaching medicine at the bedside, since expressions, as distinct from mere terms, of archaic pathology easily continue to have influence on the mind of our own day in a way detrimental to a clear understanding and view of disease.

Whatever the point of entrance and line thence of travel, the endocardium is to be regarded as the invariable centre and primary region of growth of the organism of rheumatic fever and the swollen joints as so many colonial settlements proceeding thence.

[2] Cf. ΠΕΡΙ ΠΑΘΩΝ, cap. ix.

The affected joints of rheumatic fever always recover completely; not a single case of stiff joint was to be found in the cases of the last six years in my wards. The knee-joint is one which is very often attacked in rheumatic fever, perhaps more often than any other. The presence post mortem of a mitral valve showing thickened edge, thickened tendinous cords, or small growths upon its cords or edge may be taken as indicating that the person in whose body it is found has had rheumatic fever. When I have opened the knee-joints in young patients who have died from the results of disease of the mitral valve I have never found the remains of changes in the structures of the joint, neither thickening nor degeneration. Some of these cases may have acquired their affection of the mitral valve otherwise than by rheumatic fever, but the percentage of cases in which mitral disease is the product of rheumatic fever is so large that the exceptions as regards other ways of origination of mitral disease do not affect the argument. In old hospital notes any accounts of cases of rheumatic fever terminating in stiff joints, or of stiff joints attributed to past rheumatic fever, may be suspected to have been examples of some form of septic arthritis or of progressive or degenerative arthritis and not of true rheumatic fever.

After the endocardium and the joints the temperature of rheumatic fever next deserves consideration. The well-known papers of Dr. Henry G. Sutton in the Guy's Hospital Reports for 1865 and 1866, entitled "Cases of Rheumatic Fever Treated for the Most Part by Mint Water, Collected from the Clinical Books of Dr. Gull," unfortunately give no evidence as to the temperature attained or continued when the disease was left to follow an uninterrupted course, for the thermometer had not then come into regular use in the hospitals of London.

In the 100 cases in my own wards which I have already mentioned the effect of a treatment by salicylate of soda must be allowed for. Doses of not less than 10 grains nor more than 20 were given during the febrile period of the disease, for one, two, or three days every four hours, then every six hours for a period regulated by any remains of pain or unusual rise of temperature, and succeeded by a longer continuance of administration three times a day. This was the general plan of treatment, the patient being kept in bed with a few exceptions till the temperature had been normal for three weeks. The commonest temperature chart was one in which the temperature on admission being 100° or higher it rose to a less height the next day, and perhaps still less on the third day, and then continued normal for some days, after which it rose to 99° or a little above 99° on some one day or two days of a fortnight or three weeks and then steadily continued normal or subnormal for three weeks, after which the patient left the hospital. The slight rise on one day, or continued for two or three days, of the week succeeding a pause of several days which itself succeeds the first definite fall of temperature to the normal point is characteristic. When the chart presents a different aspect circumstances which explain the greater or longer rise can generally be discovered. A few examples may be given:—

A girl, aged 10 years, was admitted to the hospital for what seemed to be her first attack of rheumatic fever. On admission her temperature was 101·5° F.; on the next day it was 99·8°, and it was then normal till the sixteenth following day, when it rose to 99·2°. It was then normal for two days, then it rose to 99°, then it was normal for four days, and then it rose to 99°, after which it remained normal.

A girl, aged 16 years, who had had a previous attack, had a temperature of 99° F. twice in the first week and one of 98·6° in the second week, and no further rise.

A woman, aged 20 years, who had had three previous attacks, was admitted with a temperature of 99° F. and on the next day her temperature was 99·8°, on the day after it was 98·6°, on the day after that 98·8°, and then it was normal or subnormal for 13 days. It then rose on two successive days to 99·2° and then it became normal for eight days, then it rose to 98·8°, was next normal for five days, and after that continued for some weeks more, with rises of a degree or a few tenths of a degree separated by intervals of several days, finally reaching a continuous normal temperature.

A woman, aged 19 years, in her first attack had on admission a temperature of 102·8° F. On the next three days it was successively 101·8°, 99·8°, and 99·4°, and was then normal for two days, then it reached 99°, and was then normal for a fortnight, then it was once more 99° and then it continued normal for three weeks.

A boy, aged nine years, was admitted with a temperature of 102·4° F. On the next two days his temperature rose to 99° and then it was normal for 15 days. After one day at 98·8° it was normal for three days, then on one day 98·8°, and then normal for 18 days, after which he left the hospital.

Variations or interruptions of this course of temperature are generally due to ascertainable causes and in rheumatic fever, as in all other diseases, a constant consideration not

merely of the daily temperatures but of the whole chart is important. Pericarditis always produces a rise in temperature of some days and may thus be inferred before a friction sound is audible. A boy, aged four and a half years, who had had pain in his knees for three weeks was admitted with a temperature of 100·8° F. and his temperature approached, or slightly exceeded, 100° for eight succeeding days. On the second day of his admission a friction sound was heard over his heart and was audible for two days. The abnormal rise of temperature was certainly due to pericarditis. Pleurisy in the absence of bacteriological evidence as to its nature must be believed to be an actual part of the cycle of rheumatic fever, and, of course, affects the chart. Bronchitis, common in patients with rheumatic fever, whose hearts are embarrassed by valvular disease of long standing, similarly affects the course of the temperature, though it remains uncertain whether it or the pneumonia which sometimes occurs are a true part of the rheumatic fever. Attacks of sore throat and common colds are other influences to be considered in contemplating the temperature chart. Whoever studies cases of rheumatic fever will become convinced that slight rises of temperature are never unimportant, and that considerable rises of temperature at exceptional times can generally be explained if sufficient search be made.

The grounds for the diagnosis of rheumatic fever are: (1) evidence of the results of endocarditis; (2) a multiple transient arthritis; and (3) a temperature chart showing an initial rise followed after a fall by occasional rises with intervals of normal temperature and with evidence of the existence of some disease for a considerable period, seldom less than three weeks. The diagnosis ought not to be made till these three factors are ascertained. If endocarditis be clearly present without arthritis ulcerative endocarditis, and not rheumatic fever is likely to be the true diagnosis. The same is true if there be a temperature chart of high oscillations with uncertain evidence of endocarditis but signs of disturbed heart and no arthritis. If there are no signs of endocarditis and a multiple arthritis at present, then a gonococcal infection and not rheumatic fever is the probable diagnosis. The same is true if, though there be signs of endocarditis and of multiple arthritis, any of the affected joints come to show signs of permanent damage. It should be added that a culture may be the only way of ascertaining whether the gonococcus or some septic organism is the origin of the condition which after some resemblance in symptoms to rheumatic fever leaves the patient with a stiff joint.

The term "subacute rheumatism" should never be used, for it suggests an absence of importance which attaches to no case, however slight, of rheumatic fever. Just as the prevalence of the idea that *petit mal* in some way means that the patient said to have it is not an epileptic, while in fact his next fit may be a most serious one, does harm, so the term subacute rheumatism, by suggesting that the case is of less importance than one of rheumatic fever, does harm. The pains are very slight in such cases, but the endocardium is none the less affected and they are often merely periods of slight endocarditis leading to or threatening more severe manifestations in the future.

Every case of chorea in which there is a cardiac murmur, accompanied by rise of temperature, must be regarded as connected with an attack of rheumatic fever, perhaps best as the continuation of such an attack. It is probable that some cases of chorea in which a valvular murmur can be heard but in which the temperature, even when taken regularly for weeks, shows no rise, are also actual continuations of rheumatic fever, and there are perhaps some cases in which the endocarditis is so nearly quiescent that there are neither murmurs nor rises of temperature and which yet have grown out of an attack of rheumatic fever and may pass on into another such attack. Spasmodic and incoördinate movements in children may be due to several causes, but it is important to recognise that what is sometimes called rheumatic chorea is a definite species of which a cardiac murmur due to the same endocarditis as that of rheumatic fever and a temperature showing occasional rises are symptoms. The first question when a case of chorea is before us is to determine whether it belongs to this species, and if it does the patient for purposes of treatment may be assumed to be in the course of an endocarditis less severe than it is in a definite attack of rheumatic fever but capable of aggravating or producing injury to the cardiac valves and especially to the mitral valve.

The administration of sodium salicylate so commonly relieves the pains in the joints as well as reduces the temperature in rheumatic fever that whenever it is found in any case that sodium salicylate has no effect, even in a large dose, the suspicion will arise that ulcerative endocarditis, a gonococcal infection, or some other condition and not true rheumatic fever is present.

The disease belongs to the first half of life, though, like measles, mumps, and some other morbid conditions of childhood and youth, it may appear for the first time in the second half of life, but here again the difficulty of certainty as to a patient's true history often raises doubt as to whether his earlier life has been free from any attack. In the absence of bacteriological evidence it is impossible to be certain, but as a result of the observation of a few supposed first attacks between the ages of 35 and 45 years I incline to the belief that rheumatic fever does now and then attack a patient at that age. Before the diagnosis is made great care should be taken to ascertain that no septic source, such as a uterine one in women, exists, or has recently existed, in the patient.

The duration of rheumatic fever is indefinite. The exact day of its commencement can rarely be fixed. In many cases the state of the heart proves that the disease has been in progress for some time before the patient is aware that he has a definite illness. The date of its absolute termination is always obscure. The difficulty of determining it is increased by the knowledge that endocarditis may continue to affect the heart—in other words, that the organism which produces it may continue to live within the heart, capable of fresh development, long after the temperature has become normal. What is commonly called an attack of rheumatic fever probably continues not less than three weeks after a normal temperature is reached. Certainly as this period is approached the temperature shows less tendency to those occasional rises which are common in the first month of the illness. The fact that a patient has not yet recovered from an attack may be indicated by slight rises of temperature, fresh pains or swelling of joints, or even by chorea with or without rise of temperature. Since there is generally no further opportunity of infection it is probable that the organism remains in the heart capable of reproducing under favourable circumstances the former phenomena. Thus the duration of the disease really depends on the presence of circumstances which are favourable to the development of an organism capable of long existence in the human body. "When a man is infected by bilharzia," said the very learned Professor Looss to me in course of a conversation on parasitology in Cairo this winter, "it may be some comfort to him to reflect that every entozoon dies after a sufficient lapse of time. What we have to do is to ascertain what its lifetime is." To learn its lifetime is equally part of the study of every micro-organism. The bacillus of enteric fever commonly ceases to be maleficent within three months of its introduction into the human body. Sir George Paget related to me the history of a patient of his who developed signs of tuberculosis of the lung at 30 years of age, was never quite free from signs of it, and died from well-marked pulmonary tuberculosis when over 90 years of age. The tubercle bacillus had lived in his body for full 60 years. The duration of life of the organism of rheumatic fever is certainly less than that of the tubercle bacillus. Its active presence, as shown by its effects, lasts longer than that of the pneumococcus in lobar pneumonia. I shall venture to offer a hypothesis as to its approximate duration when I come to consider the prognosis.

The conclusion to which I wish to attain in this lecture is that every case of rheumatic fever, whether the pains in the joints are slight or severe, is a case of endocarditis, and that the condition of the endocardium is not to be regarded as a frequent complication but as the essential and invariable feature of the disease. I cannot help wishing that a name absolutely extricating this serious disease from the confusion involved in the term "rheumatism" could be found. Medical terms, inconstant as their meaning is from century to century, are difficult to destroy. It is no less difficult to bring them into use. The "dothienenterite" of Bretonneau was appropriate enough but is almost as little

used as the "pædosteosplanchnocace" of Daniel Whistler. Dr. Charles Badham's term "bronchitis," issued just a century ago, owes its firm place in the English language as well as in medical practice partly to the circumstance that no patient likes to think that his lungs are affected, since he knows that people often die from lung disease, but is willing to account for his cough by a name which does not convey a definite anatomical idea to his mind. Remembering this unwillingness of men and women to hear that they have diseases associated with the lungs or heart, I feel that "heart fever," which would be an appropriate term for a disease of which the most serious feature is endocarditis, would have little chance of coming into use instead of rheumatic fever. Were it not for this difficulty on the side of public opinion, which is what chiefly regulates the use or neglect of words, the term "heart fever" might with advantage be adopted for that morbid condition in which endocarditis, transient arthritis, and raised temperature are always present.

THE BLOOD IN RICKETS.

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EVER since von Jaksch [1] described his well-known cases of "anæmia infantum pseudo-leukæmica" the relationship of that disease to rickets has been much discussed. In nearly all the records of cases some mention is made of its association with rickets, and, in fact, not a few authors write as if "splenic anæmia of infancy" were merely a severe degree of the anæmia usually described as accompanying rickets. To this rule the Italians form striking exceptions, as they almost universally make no mention of rickets in their reports of cases. Von Jaksch taught that splenic anæmia was of the nature of a primary disease, and a quite distinct clinical entity, while Wentworth [2] and Hutchison,[3] on the other hand, think that it is of the nature of a secondary anæmia. The last-named author considers that it and rickets may be the result of a common, but as yet unknown, cause, while the Italians hold that it is consequent on septic infection, and designate it by the name "anæmia splenica infettiva."

Considering the frequency with which rickets occurs, comparatively seldom has the condition of the blood been the subject of study, and much of the diversity of opinion regarding the nature of splenic anæmia and its relationship to rickets is no doubt due to this lack of knowledge of the blood picture in rickets. Many authors have examined one or two cases, but I have only been able to discover two papers on the subject which are based on extensive observations.

Morse [4] in 1897 reported the result of an investigation into the condition of the blood in 20 cases of active and uncomplicated rickets occurring in children between the ages of seven months and two years. He found the percentage of hæmoglobin (as estimated by the apparatus of von Fleischl) to vary between 48 and 77, the red cells to vary between 3,508,000 and 5,528,000 per cubic millimetre, and the leucocytes between 5500 and 18,800 per cubic millimetre. He observed nucleated red blood corpuscles in three of the cases, all of which presented some enlargement of the spleen; and in one of these, in which the spleen was greatly enlarged, nucleated red cells, both megaloblasts and normoblasts, were very numerous. In nearly all mention is made of some variation in the size of the red cells, and occasionally poikilocytosis was observed. Morse concludes from his observations that most cases of rickets present some anæmia which as a rule varies with the severity of the disease, and that there may or may not be a leucocytosis.

Felsenthal (quoted by Morse) investigated 12 cases of rickets, the patients varying in age from nine months to two years. Three of the patients were very markedly rachitic and had large spleens. He got practically the same result in all the 12 cases. The red blood corpuscles were not decreased in number, or only to a very slight extent, but the hæmoglobin was always diminished. Nucleated red cells only occurred in the most severe cases.

Esser,[5] in a recent paper on the Etiology of Rickets, discusses the condition of the blood so far as the number and character of the leucocytes are concerned. He asserts that there is almost invariably, at least in the early stages, a marked leucocytosis, amounting in some instances to 30,000 per cubic millimetre, and that the nuclei of the polymorphonuclear leucocytes are more lobulated than normal. He does not, however, give any table of his results, nor does he make any mention of the percentage of hæmoglobin or number of red blood corpuscles.

Holt,[6] Cheadle,[7] and Ashby,[8] in their writings on rickets, speak of there always being a more or less severe anæmia, but not one makes any mention of a specific example. Textbooks on hæmatology repeat this opinion. Ewing [9] and Cabot [10] both assert that in rickets there is a variable degree of anæmia, proportionate to the severity of the rachitic manifestations. Cabot says that anæmia is always present, and that examples of polychromatophilia, normoblasts and myelocytes, are not infrequently observed. Hutchison,[11] on the other hand, states that severe rickets is often accompanied by no appreciable degree of anæmia, and Pfaundler and Schlossmann [12] say that in rickets there is nothing characteristic in the blood.

Throughout the literature of splenic anæmia are records of isolated or perhaps two examples of rickets examined by one author, but in the majority of instances mention is made of some degree of splenic enlargement, and in not a few of these cases the blood picture was found similar to that met with in splenic anæmia. It should be remembered, however, that in splenic anæmia the size of the spleen bears no definite relationship to the severity of the anæmia, and also that it is very doubtful, in view of recent observations, if uncomplicated rickets is accompanied by any degree of splenic enlargement, and, as Starck [13] has shown, that splenic enlargement is as common in non-rachitic as in rachitic children.

It was to elucidate this question, the condition of the blood in active and uncomplicated rickets, that the present work was undertaken, and the subject was studied both from the experimental and clinical aspects. The experimental findings will be published later, and in the present paper I intend to confine myself chiefly to the discussion of the results as found in the cases of spontaneous rickets in children.

Spontaneous rickets.—I investigated the blood picture in 30 cases of active and uncomplicated rickets in children varying between the ages of 12 and 42 months, and to control these results blood examinations were carried out in 12 healthy children of corresponding ages and belonging to the same class of society. Some were absolutely healthy and others were the subjects of such conditions as hernia, cleft palate, and hypospadias, conditions which, it will be admitted, do not affect the blood picture. The rachitic cases for the most part were collected from patients attending the outdoor department of the Glasgow Hospital for Sick Children during the spring of 1907 and the spring of 1908. All the observations were made at the same time of the day—between 11 A.M. and 1 P.M. I contented myself with single observations, and, as some might raise objections to the reliability of such examinations, it may be stated that the present work was commenced after I had obtained several years of almost daily practice in this kind of work. When one has obtained a certain amount of experience in such work the personal error becomes reduced to a minimum, and the reliability of isolated examinations undoubted. Moreover, is it not as a rule on the result of a single observation that a diagnosis often rests?

At each examination the hæmoglobin was estimated by Gowers's hæmoglobinometer, and the red and white cells were enumerated with the Thoma-Leitz hæmocytometer, using dilutions of 1 in 100 and 1 in 10 respectively. Films

[1] Wiener Klinische Wochenschrift, 1888.
[2] Boston Medical and Surgical Journal, vol. cxlv., p. 491.
[3] Goulstonian Lectures, Lecture II., THE LANCET, May 14th, 1904, p. 1323.
[4] Boston Medical and Surgical Journal, vol. cxxxvi., p. 369.
[5] Münchener Medicinische Wochenschrift, 1907, p. 818.
[6] Diseases of Infancy and Childhood, London, 1907, p. 267.
[7] Allbutt's System of Medicine, 1907, vol. iii., p. 122.
[8] Gibson's Text-book of Medicine, 1901, p. 496.
[9] Clinical Pathology of the Blood, London, 1904, p. 378.
[10] The Clinical Examination of the Blood, London, 1897, pp. 279 and 280.
[11] Goulstonian Lectures, THE LANCET, May 14th, 1904.
[12] The Diseases of Children, London, 1908, vol. ii., pp. 205 and 206.
[13] Quoted by Wentworth, Boston Medical and Surgical Journal, vol. cxlv., p. 491.

were also made and stained with both Jenner's and Ehrlich's triacid fluids, and a differential count was made; the number of leucocytes counted varied between 400 and 800. Every case was examined after treatment with Jenner's fluid and many after the use of Ehrlich's triacid stain, especially when there was any dubiety as to the presence or absence of granules in the cells.

It may be advisable in this connexion to indicate the exact significance which I have attached to the terms by which the different types of leucocytes are designated. 1. In the classification of neutrophile, eosinophile, and basophile polymorphonuclear leucocytes and myelocytes I have used as criteria those laid down by Ehrlich and about which all authors will agree. 2. As hyaline cells I have named all

TABLE A.—*Cases between the Ages of 12 and 18 Months.*

No.	Sex and age.	Condition of rickets.	Spleen.	Blood examination. Absolute number of leucocytes per c.mm. and percentage of leucocytes. Hb.	Red cells.	White cells.	Neutrophile polymorphs.	Neutrophile myelocytes.	Eosinoph.	Basoph.	Hyaline.	Transitional.	Lymph.	Mononuclear with metachromatic granules.	Nucleated red cells.
							%	%	%	%	%	%	%	%	
1	F., 13 months	Marked. Not walking.	Not palpable.	80	6,360,000	13,800	3795—27·5	138—1·0	138—1·0	138—1·0	1725—12·5	414—3·0	4,692—34·0	2760—20·0	—
2	F., 14 months	,,	,,	65	5,930,000	15,600	5304—34·0	—	156—1·0	—	—	46—0·3	2,745—17·6	7347—47·1	—
3	F., 15 months	,,	,,	90	5,300,000	7,200	2304—32·0	—	216—3·0	—	648— 9·0	576—8·0	792—11·0	2664—37·0	—
4	M., 15 months	,,	,,	85	4,460,000	16,600	4515—27·2	—	664—4·0	99—0·6	398— 2·4	99—0·6	9,229—55·6	1580— 9·4	—
5	M., 16 months	Early. Bone changes slight. Not walking.	,,	95	5,740,000	15,400	3696—24·0	—	1278—8·3	92—0·6	92— 0·6	46—0·3	8,470—55·0	1740—11·3	—
				Control Cases.											
I.	M., 17 months	No rickets (phimosis).	Not palpable.	84	5,350,000	9,400	4549—48·4	—	56—0·6	37—0·4	150— 1·6	206—2·2	3,760—40·0	639— 6·8	—
II.	F., 17 months	No rickets (umbilical hernia).	,,	64	5,000,000	24,200	7550—31·2	—	387—1·6	96—0·4	192— 0·8	338—1·4	14,568—60·2	1016— 4·2	1 in 500 leucocytes.

TABLE B.—*Cases between the Ages of 18 and 24 Months.*

No.	Sex and age.	Condition of rickets.	Spleen.	Blood examination. Absolute number of leucocytes per c.mm. and percentage of leucocytes. Hb.	Red cells.	White cells.	Neutrophile polymorphs.	Neutrophile myelocytes.	Eosinoph.	Basoph.	Hyaline.	Transitional.	Lymph.	Mononuclear with metachromatic granules.	Nucleated red cells.
							%		%	%	%	%	%	%	
6	M., 19 months	Marked. Not walking.	Palpable ½" below costal arch.	90	4,200,000	6,200	1643—26·5	—	372—6·0	—	93—1·5	93—1·5	2356—38·0	1705—27·5	—
7	M., 18 months	,,	Not palpable.	85	5,620,000	8,600	2494—29·0	—	309—3·6	—	86—1·0	—	4853—57·6	739— 8·6	—
8	F., 20 months	,,	,,	75	6,210,000	9,600	3456—36·0	—	—	48—0·5	336—3·5	192—2·0	4848—50·5	720— 7·5	—
9	M., 20 months	Marked. Commencing to walk.	,,	100	6,130,000	8,200	3854—47·0	—	328—4·0	—	—	82—1·0	1066—13·0	2870—35·0	—
10	F., 20 months	Marked. Not walking.	Palpable on deep inspiration.	80	5,140,000	9,800	4508—46·0	—	98—1·0	—	147—1·5	343—3·5	3185—32·5	1517—15·5	—
11	M., 22 months	Marked. Not walking. Diarrhœa.	Not palpable.	90	5,000,000	20,800	13041—62·7	—	249—1·2	104—0·5	249—1·2	1456—7·0	4513—21·7	1185— 5·7	1 in 400 leucocytes.
				Control Cases.											
III.	M., 19 months	No rickets (hypospadias).	Not palpable.	75	6,200,000	8,900	2892—32·5	—	89—1·0	26—0·3	53—0·6	80—0·9	5268—59·2	490— 5·4	—
IV.	F., 23 months	No rickets.	,,	84	6,130,000	13,200	4065—30·8	—	79—0·6	26—0·2	—	158—1·2	8632—65·4	237— 1·8	—

TABLE C.—*Cases between the Ages of 24 and 30 Months.*

No.	Sex and age.	Condition of rickets.	Spleen.	Blood examination. Absolute number of leucocytes per c.mm. and percentage of leucocytes.											
				Hb.	Red cells.	White cells.	Neutrophile polymorphs.	Neutrophile myelocytes.	Eosinoph.	Basoph.	Hyaline.	Transitional.	Lymph.	Mononuclear with metachromatic granules.	Nucleated red cells.
							%	%	%	%	%	%	%	%	
12	F., 24 months	Marked. Not walking. Walked a little when 20 months old.	Not palpable.	76	5,180,000	8,200	2337—28·5	—	164—2·0	—	41—0·5	287—3·5	4633—56·5	738—9·0	2 in 400 leucocytes.
13	F., 26 months	Marked. Not walking. Walked a little when 14 months old.	Palpable on deep inspiration.	65	4,750,000	16,400	8692—53·0	—	—	65—0·4	32—0·2	65—0·4	7150—43·6	393—2·4	—
14	F., 27 months	Marked. Not walking.	Not palpable.	94	5,300,000	14,000	8064—57·6	—	336—2·4	56—0·4	—	—	4956—35·4	588—4·2	—
15	F., 27 months	Very marked. Not walking.	,,	100	4,240,000	19,000	7600—40·0	—	2318—12·2	152—0·8	76—0·4	304—1·6	7638—40·2	1368—7·2	—
16	M., 28 months	Marked. Not walking.	,,	100	6,360,000	19,600	7252—37·0	—	744—3·8	117—0·6	—	156—0·8	10427—53·2	901—4·6	—
				Control Cases.											
V.	F., 25 months	No rickets.	Not palpable.	94	4,920,000	11,800	6018—51·0	—	295—2·5	59—0·5	59—0·5	436—3·7	4189—35·5	731—6·2	—
VI.	M., 29 months	No rickets (inguinal hernia).	,,	90	6,060,000	12,600	5796—46·0	—	667—5·3	75—0·6	—	37—0·3	5418—43·0	579—4·6	—
VII.	M., 25 months	No rickets (phimosis).	,,	98	5,840,000	11,500	4864—42·3	11—0·1	59—0·5	46—0·4	59—0·5	—	6244—54·3	276—2·4	—

TABLE D.—*Cases between the Ages of 30 and 36 Months.*

No.	Sex and age.	Condition of rickets.	Spleen.	Blood examination. Absolute number of leucocytes per c.mm. and percentage of leucocytes.											
				Hb.	Red cells.	White cells.	Neutrophile polymorphs.	Neutrophile myelocytes.	Eosinoph.	Basoph.	Hyaline.	Transitional.	Lymph.	Mononuclear with metachromatic granules.	Nucleated red cells.
							%	%	%	%	%	%	%	%	
17	F., 30 months	Slight. Not walking.	Not palpable.	86	4,520,000	11,300	4746—42·0	—	768—6·8	22—0·2	610—5·4	271—2·4	4000—35·4	813—7·2	—
18	M., 30 months	Very marked. Not walking.	,,	80	4,140,000	15,900	6757—42·5	—	2623—16·5	—	714—4·5	397—2·5	3498—22·0	1908—12·0	—
19	F., 32 months	Slight. Not walking.	Palpable one finger's breadth below costal arch.	100	6,410,000	8,600	3096—36·0	—	318—3·7	43—0·5	361—4·2	748—8·7	2855—33·2	1161—13·5	—
20	M., 32 months	Marked. Not walking. Walked at 12 months.	Not palpable.	90	5,550,000	6,400	2779—52·8	—	128—2·0	25—0·4	358—5·6	614—9·6	1049—16·4	844—13·2	—
21	F., 33 months	Marked. Not walking.	,,	90	5,270,000	13,000	3536—27·2	—	364—2·8	—	2184—16·8	988—7·6	620—4·0	5408—41·6	—
				Control Cases.											
VIII.	M., 30 months	No rickets.	Not palpable.	80	5,810,000	7,000	2240—32·0	14—0·2	210—3·0	42—0·6	986—1·4	140—2·0	3864—55·2	392—5·6	—
IX.	F., 33 months	,,	,,	82	4,405,000	10,800	3045—28·2	—	626—5·8	151—1·4	—	194—1·8	6004—55·6	777—7·2	—

large mononuclears with an oval or slightly indented nucleus and a relatively large amount of clear and faintly staining protoplasm, entirely devoid of granulations. 3. As transitional cells I have classified all those with a markedly bilobed nucleus and clear protoplasm devoid of granulations. The protoplasm of some of these cells did contain an occasional metachromatic granulation as stained with Jenner's fluid, but after staining with Ehrlich's triacid stain no granulation was detected. 4. Under the heading of "Lymphocytes" I have included all cells, irrespective of their size, which have a relatively large and centrally or slightly eccentrically placed nucleus, surrounded by a smaller amount of markedly basophile protoplasm often showing at the margins a certain degree of fraying. These cells varied much in size—from less than to twice that of a red blood corpuscle. The nucleus often showed several slight indentations, and in not a few one or two nucleoli were observed. These cells contained no granules. 5. I have classified apart under the term "Mononuclears with metachromatic granulations" a cell which it was often difficult to say was hyaline, lymphocytic, or myelocytic in nature. It was of very variable size, and it possessed a circular or slightly oval nucleus frequently showing several small indentations. The nucleus was relatively large, and it stained more deeply with basic dyes than did that of the typical lymphocyte. The protoplasm varied much in amount and density, and contained a variable but usually small amount of faintly staining metachromatic granulations. Sometimes at one part of its circumference the protoplasm was markedly basophile like a lymphocyte, and at another part quite hyaline in character. In films stained with Ehrlich's triacid fluid no trace of granulation could be detected. All gradations between this cell, the lymphocyte, and the hyaline were observed. This type of cell has been described by Naegeli, who considers it lymphocytic in nature. My reasons for classifying this cell apart were (1) the difficulty of deciding as to its exact nature and (2) that in rickets it was decidedly more numerous than in the case of normal children.

I have considered it advisable in the consideration of the cases of spontaneous rickets to tabulate the results in groups according to the age of the patient. The 30 cases have been divided into five groups, each of which comprises an age-period of six months. Under each group will be found a table giving detailed accounts of each of the rachitic and normal cases of corresponding ages, and a secondary table comparing the averages of the rachitic and of the normal cases with the reputed average (of authors) for that particular period of life.

Group A, Table A (comprising cases between the ages of 12 and 18 months).—In this series of cases it will be observed that in all except No. 5 the rachitic condition was marked. Not one of the children was walking, and in none was there any enlargement of the spleen noted. With the exception of cases Nos. 2 and 4 there was absolutely no evidence of anæmia. In case No. 2 the hæmoglobin was diminished only 5 per cent. and in case No. 4 the red blood corpuscles were some 500,000 per cubic millimetre below the normal average. In no case was a nucleated red blood corpuscle observed. In one case (No. 3) there was a leucopenia, while in the other four the number of leucocytes was slightly above the average, but there was nothing which could be called characteristic excepting the large numbers of the mononuclear cell with metachromatic granulations.

In one of the controls, No. II., a perfectly healthy and lively child, the hæmoglobin only amounted to 64 per cent. and the leucocytes numbered more than in any one of the rachitic children. The most striking features in the above table are the relatively higher blood counts and less variation in number of leucocytes than in the normal cases. These points will be better appreciated by comparing the average of the results in the rachitic cases with the average of the controls and also with the accepted average blood estimations as quoted by Hutchison and Carstanjen.[14]

—	Hb.	Red cells.	Leucocytes.	Absolute number per c.mm. of— Neutrophil polymorphs.	Lymphocytes.	Mononuclears with metachromatic granules.
Rachitic cases.	83	5,558,000	13,720	4122	5185	3218
Controls...	74	5,175,000	16,800	6049	9164	827
Reputed average.	70	5,000,000	12,500	5250	5875	—

Group B, Table B (comprising cases between the ages of 18 and 24 months).—In all of these cases the rachitic manifestations were marked, and with one exception they had not as yet learned to walk. The spleen in two of the cases was palpable, but in one only on deep inspiration, so that there was in all probability no marked enlargement of the organ. The hæmoglobin in all the cases was above normal, and with the exception of Case No. 6, in which the red cells were 800,000 per cubic millimetre below the normal average, there was no oligocythæmia. In one case (No. 11) one nucleated red cell was observed while counting 400 leucocytes, and in this case there was also a distinct degree of leucocytosis, but this child had been suffering from diarrhœa for some days prior to the examination. The other cases presented a varying degree of leucopenia. Here again the mononuclears with metachromatic granules were fairly abundant. The absence of anæmia, on the contrary the richness of the blood, will be better exemplified by comparing the averages as before :—

—	Hb.	Red cells.	Leucocytes.	Absolute number per c.mm. of— Neutrophil polymorphs.	Lymphocytes.	Mononuclears with metachromatic granules.
Rachitic cases.	86·6	5,383,333	10,533	4832	3470	1456
Controls...	79·5	6,160,000	11,500	3478	7450	363
Reputed average.	70	5,000,000	11,000	4950	4950	—

Group C, Table C (comprising cases between the ages of 24 and 30 months).—In four of these cases the rachitic manifestations were marked and in one very marked. Not one of the children was walking, though two had walked at an earlier period of life, only, however, to go off their feet later. In one case the spleen was palpable on deep inspiration. Two of the cases presented a reduction of the hæmoglobin to the extent of 4 per cent. and 15 per cent., and in two the red cells were diminished to the extent of 250,000 and 760,000 per cubic millimetre below the normal. In one case two nucleated red blood corpuscles, both of normoblastic type, were observed while counting 400 leucocytes. Four of the cases presented a certain degree of leucocytosis due both to a polymorphonuclear and lymphocytic excess. Here, again, comparison of the averages shows that though the blood count of the rachitic cases is inferior to that of the controls it is decidedly above the accepted average. There is, however, a slight leucocytosis and the cell with metachromatic granulations is still unduly abundant.

—	Hb.	Red cells.	Leucocytes.	Absolute number per c.mm. of— Neutrophil polymorphs.	Lymphocytes.	Mononuclears with metachromatic granules.
Rachitic cases.	87	5,166,000	15,440	6789	6562	797
Controls...	94	5,606,000	11,966	5569	5283	528
Reputed average.	80	5,000,000	10,500	5040	4414	—

Group D, Table D (comprising cases between the ages of 30 and 36 months).—In two of the cases the rachitic condition was slight; in two it was marked, and in one it was very marked, and with the exception of one of the

[14] Goulstonian Lectures, Lecture I., THE LANCET, May 7th, 1904, p. 1253.

slight cases, in which the spleen was palpable half an inch below the costal arch, there was no apparent enlargement of that organ. Not one of the children was walking, though one (No. 20) had walked for a little when 12 months old. The hæmoglobin was in all above normal, and in two the red cells were below the average to the extent of 480,000 and 860,000 per cubic millimetre, but in one of the controls there was also a diminution of the red cells. In no case were nucleated red cells observed. In only one case could there be said to be any leucocytosis, but in all the mononuclear leucocyte with metachromatic granulations was unduly abundant. In the above table the averages are contrasted.

—	Hb.	Red cells.	Leucocytes.	Absolute number per c.mm. of—		
				Neutrophil polymorphs.	Lymphocytes.	Mononuclears with metachromatic granulations.
Rachitic cases.	89·2	5,274,000	11,400	4182	2384	2026
Controls ...	81·0	5,107,000	8,900	2642	4934	584
Reputed average.	80·0	5,000,000	10,000	5000	5000	—

Group E, Table E (comprising cases between the ages of 36 and 42 months).—In three of the cases the rickets was very marked, and in only one case was the child able to walk. The spleen was not palpable in a single instance. In two cases (Nos. 24 and 26) there was a diminution in the red cells to the extent of 10 per cent. below normal, but otherwise the condition of the blood was above the average. In no case were nucleated red corpuscles observed. In five of the cases there was a degree of leucocytosis, but in one only (No. 25) was it marked, while in four of the cases the leucocytes were practically normal in number. As before, the only characteristic feature was the large counts of the mononuclear cell with metachromatic granulations. A comparison of the averages shows that there is certainly no anæmia, but rather a tendency to polycythæmia, with an increase in the amount of

TABLE E.—*Cases between the Ages of 36 and 42 Months.*

No.	Sex and age.	Condition of rickets.	Spleen.	Blood examination. Absolute number of leucocytes per c.mm. and percentage of leucocytes.											
				Hb.	Red cells.	White cells.	Neutrophile polymorphs.	Neutrophile myelocytes.	Eosinoph.	Basoph.	Hyaline.	Transitional.	Lymph.	Mononuclear with metachromatic granules.	Nucleated red cells.
							°/₀		°/₀	°/₀	°/₀	°/₀	°/₀	°/₀	
22	F., 36 months	Very marked. Not walking.	Not palpable.	84	6,250,000	14,700	6825—46·5	—	1249— 8·5	73—0·5	1837—12·5	661—4·5	3650—24·7	382— 2·6	—
23	F., 36 months	Marked. Not walking. Walked when 11 months old.	,,	90	5,920,000	10,000	2800—28·0	—	460— 4·6	—	1060—10·6	260—2·6	3120—31·2	2300—23·0	—
24	M., 36 months	Marked. Not walking.	,,	90	4,400,000	7,300	3308—45·6	—	934—12·8	55—0·8	116— 1·6	350—4·8	1635—22·4	876—12·0	—
25	F., 36 months	,,	,,	90	5,400,000	30,400	13144-43·5	—	152— 0·5	—	516— 1·7	364—1·2	9393—30·9	6748—22·2	—
26	F., 36 months	,,	,,	100	4,570,000	10,500	3202—30·5	—	1732—16·5	315—3·0	892— 8·5	210—2·0	2835—27·0	1364—13·0	—
27	F., 36 months	Marked. Not walking. Walked a little at 24 months.	,,	100	5,500,000	15,000	8520—56·8	—	630— 4·2	105—0·7	—	210—1·4	4995—33·3	465— 3·1	—
28	M., 38 months	Marked. Not walking. Walked a little at 18 months.	,,	90	6,890,000	14,500	6469—44·4	—	1218— 8·4	58—0·4	406— 2·4	319—2·2	5278—36·4	638— 4·4	—
29	M., 42 months	Very marked. Not walking.	,,	100	5,700,000	13,500	5332—39·5	—	1282— 9·5	67—0·5	1350—10·0	67—0·5	4185—31·0	1282— 9·5	
30	M., 42 months	Very marked. Walking for six weeks.	,,	100	5,030,000	9,500	5206—54·8	—	475— 5·0	19—0·2	57— 0·6	57—0·6	3363—35·4	323— 3·4	—
							Control Cases.								
X.	M., 36 months	No rickets (cleft palate).	Not palpable.	92	4,920,000	8,300	3735—45·0	—	107— 1·3	49—0·6	24—0·3	107—1·3	3427—41·3	733— 8·6	—
XI.	M., 42 months	No rickets (phimosis).	,,	90	4,555,000	5,900	2016—35·7	—	41— 0·7	11—0·2		11—0·2	3245—55·0	472— 8·0	—
XII.	F., 45 months	No rickets (cleft palate.)	,,	80	4,855,000	7,700	3634—47·2	—	361— 4·7	15—0·2	—	53—0·7	3157—41·0	462— 6·0	—

hæmoglobin. The leucocytes are slightly increased but do not show anything diagnostic.

	Hb.	Red cells.	Leucocytes.	Absolute number per c.mm. of—		
				Neutrophil polymorphs.	Lymphocytes.	Mononuclears with metachromatic granules.
Rachitic cases.	94	5,515,555	13,933	6089	4272	1597
Controls...	87·3	4,776,666	7,300	3161	3243	555
Reputed average.	80·0	5,000,000	9,000	5040	2720	—

From an examination of the above tables it is seen that anæmia is most certainly not the rule in rickets. Occasionally there may be a slight degree of anæmia, and that quite irrespective of the severity of the disease. In nine of the cases (27·6 per cent.) the question of anæmia might be raised, but as the diminution in either the red cells or hæmoglobin was comparatively slight, and almost as low counts were obtained in some of the controls, all of which were apparently in good general health, it is more than likely that the lower estimations were quite within normal limits. In the majority of the cases, on the other hand, the hæmoglobin and red cell estimations were notably high. This point is most strikingly brought out in the smaller tables of averages. In all the groups the average amount of hæmoglobin and number of red cells for the rachitic cases were in excess of the accepted average, though in Groups B and C (18-30 months) the number of red cells was somewhat less than in the controls. In all the rachitic cases the red blood corpuscles varied much in size, but only very occasionally was poikilocytosis observed. This variation in the size of the red cells is, of course, quite characteristic of normal infantile blood, and was also present in the controls, but in some of the rachitic cases it was so marked as to suggest the picture of "pernicious anæmia." Polychromatophilia was only very occasionally observed, and was most certainly not a marked feature. As the above records show, nucleated red blood corpuscles were decidedly rare.

The cases showed considerable variation as regards the number of leucocytes. Eighteen presented some degree of leucocytosis, nine a leucopenia, while in three they were exactly of the usually accepted number. With the exception of two cases, in which the leucocytes numbered 20,000 and 30,000 per cubic millimetre, the increase in the majority was so slight (maximum 19,000) as to be quite within the limits of the normal variation. However, in all the groups except Group B, the rachitic cases possessed the highest average number of white cells per cubic millimetre. A more characteristic feature of the rachitic cases was the high proportion of the mononuclear cell with metachromatic granulations; the significance of this increase is, however, very doubtful, and it is very questionable if it would be possible from the preponderance of this cell to diagnose a rachitic from a non-rachitic case.

One point of importance exemplified by the above records is the rarity of any splenic enlargement in this disease. In only one of the cases could there be any question of notable splenic enlargement, and even in that case it is doubtful if the organ was really increased in size. It perhaps should be mentioned that these cases were not selected, but were handed over to the author by the "Visiting Physicians" at the "Dispensary" as cases of uncomplicated rickets—i.e., unaccompanied by any inflammatory mischief.

In a previous paper[15] I have expressed the opinion that confinement and lack of exercise played an important part in the etiology of rickets, and the above polycythæmia and increase in hæmoglobin are possibly a reaction on the part of the economy to compensate for the deficient amount of oxygen and defective respiration, necessary consequences of the above factors. We know, of course, that residence in a rarefied atmosphere, as, e.g., on the heights of mountains, produces the same condition.

These results are in close agreement with the experimental findings, which will be reported elsewhere. In four out of eight animals experimented with there was a steady rise in the amount of hæmoglobin and number of red cells in spite of the development of marked rickets. In one case there was a slight fall in the number of red cells at the time of the last examination, and in another the amount of hæmoglobin and number of red cells remained constant. In two only did there develop a slight degree of anæmia, and one of these animals died from broncho-pneumonia. Nucleated red corpuscles were seldom noticed after the appearance of rachitic manifestations. A certain degree of leucocytosis appeared in two cases after the appearance of rickets, but in both cases the leucocytic increase was due to broncho-pneumonia. In four of the animals there was absolutely no leucocytosis.

Conclusions.—1. In active and uncomplicated rickets anæmia is not the rule but is to be regarded as exceptional and, when it occurs, due to adventitious causes. 2. On the contrary, in rachitic children the amount of hæmoglobin and the number of red cells in the series examined are notably in excess of the normal average. 3. The red blood corpuscles, as a rule, vary more in size than in normal individuals of similar ages, but otherwise there is no abnormality. 4. Nucleated red cells, poylchromatophilia, and myelocytes are of the rarest occurrence. 5. In rickety subjects there is little characteristic change as far as the leucocytes are concerned. They may be normal, slightly increased, or even diminished in number. The mononuclears more frequently than the polymorphs show an absolute increase in number per cubic millimetre.

I have much pleasure in acknowledging my indebtedness to Dr. T. K. Dalziel, Dr. J. H. Nicoll, Dr. W. K. Hunter, and Dr. R. Barclay Ness for granting me permission to use their cases in this research.

Glasgow.

[15] Brit. Med. Jour., July 4th, 1908, p. 13.

TWO CASES OF METRORRHAGIA AT AN ADVANCED AGE NOT DUE TO MALIGNANT DISEASE.

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IN the great majority of cases in which vaginal hæmorrhage occurs after the definite establishment of the menopause the cause will be found to be a malignant growth at some part of the genital tract. The occurrence of such bleeding should therefore always lead to an immediate and thorough investigation. The presence of a malignant growth on the vulva or in the vagina can hardly be overlooked, when any examination is made at all. Similarly, cancer affecting the cervix can generally be easily recognised. When, however, the vulva, vagina, and cervix appear normal it is still possible that there may be malignant disease in the endometrium itself. Absolute certainty on this point can only be reached by dilating the cervix, and examining microscopically a portion of any growth which may be found. That a case is one of malignant disease of the body of the uterus becomes, however, very highly probable if, in addition to the bleeding, there is severe pain referred to the region of the uterus, combined with the recognition on bimanual examination that the body of the uterus is enlarged. Such pain is, however, by no means always complained of. In both the cases here recorded, until the cervix was dilated, the symptoms and signs made it very probable that a malignant growth was present in the body of the uterus. In both, as will be seen from the details given, this expectation was agreeably disappointed.

CASE 1.—The patient was a woman, aged 73 years, who had had four children, the last 43 years previously, and one miscarriage some time after the last confinement. The menopause occurred at the age of 53 years. Since then there had been no vaginal hæmorrhage till the spring of 1907, when a loss of blood occurred lasting nine days, which the patient described as being "like a period." Since then there had been a constant slightly blood-stained discharge. There had been some pain in the lower part of the back and in the lower abdomen, but it had not been at all severe, and she had had none at all for some six weeks prior to her visit to me, which was on July 24th, 1907. On

examination some brown discharge was found in the vagina. The cervix was normal, but the body of the uterus was found to be distinctly enlarged, and the sound passed 3¾ inches. I advised her to have the cervix dilated, so that the endometrium might be explored; this was accordingly done shortly afterwards in a nursing home. For the dilatation, tents were inserted, and the dilatation was completed under anæsthesia next day with Hegar's dilators. On passing the finger into the uterine cavity a polypus of the size of a large walnut was found. It was of firm consistence, and its attachment to the uterine wall was quite definite and circumscribed. I removed the polypus in the usual way and sent a portion of it for examination to the Laboratories of Public Health. The report on it was as follows: "This tissue has the structure of a very adenomatous polypus. Some of the glands are cystic, the stroma is infiltrated with inflammatory products, but the tissue is benign." The fact that the polypus was non-malignant was the more important as the patient had a feeble, dilated heart, and Dr. F. W. Hewitt, who gave the anæsthetic, considered she would not have stood a major operation such as abdominal hysterectomy.

CASE 2.—This patient was a woman, aged 70 years, who had been married 45 years, and had had three children, the last 35 years previously, and four miscarriages all before the first child. The menopause occurred at the age of 50 years. She came to see me in December, 1908, and said she had been losing blood almost constantly, but not in large amount, for at least 18 months. When she was not bleeding there was a "sticky" vaginal discharge. She had had some backache, but no severe pain. On examination the os uteri was a little patulous, but the cervix was otherwise normal. The uterus was not well felt bimanually, as the patient was exceedingly stout. The sound, however, passed 2¾ inches, causing slight bleeding. This patient was admitted shortly afterwards into the London Hospital under my care. The cervix was dilated in the same way as in the preceding case, and a polypus almost exactly similar in size and in microscopic structure was found and removed.

I may add that in July, 1907, I showed a specimen at the Obstetrical Society of a fibroid polypus removed from a patient, 72 years of age. In this case the polypus projected into the vagina through the dilated os uteri. It was the occurrence of bleeding which led to an examination and the discovery of the polypus. Microscopical examination showed that the polypus was not malignant. These three cases are, I think, instructive in showing that even at such advanced ages as 70, 72, and 73, the tissues of the uterus may in very rare instances depart from the state of quiescence which then so generally characterises them, and take on an activity leading to the production of benign tumours similar to those so frequently found in adult life before the occurrence of the menopause. Such cases are, however, in my experience very rare; and it should be remembered that, as bleeding after the menopause is so very generally due to the presence of a malignant growth, the benign character of any growth which may be removed in such circumstances should only be accepted as proved after careful microscopical examination.

Another cause of bleeding after the menopause, not due to malignant disease, of some interest is the growth of an ovarian tumour. It is only, however, in rare cases that metrorrhagia is found associated with the growth of an ovarian tumour after the menopause while on the other hand ovarian tumours are common in elderly women. It is not clear why in the majority of such cases there is no metrorrhagia if a causal relation exists between the two conditions. In a certain number, however, it appears that such a relation does exist, since after the removal of the ovarian tumour the metrorrhagia ceases, and does not recur. I recorded some cases of this kind in THE LANCET of Jan. 2nd, 1897, p. 23, and also in THE LANCET of June 16th, 1906, p. 1674.

Upper Brook-street, W.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION.—The spring meeting of the South-Eastern division of the Medico-Psychological Association will be held by the courtesy of Dr. E. S. Pasmore at the Croydon Mental Hospital, Upper Warlingham, on Tuesday, April 27th. Dr. Pasmore kindly invites the members to luncheon to 1.30 P.M. Dr. Thomas Claye Shaw will read a paper upon the Clinical Value of Consciousness in Insanity.

AN ENORMOUS FÆCAL TUMOUR IN A GIRL WITH CONGENITAL ABNORMALITIES OF HER PELVIC VISCERA.

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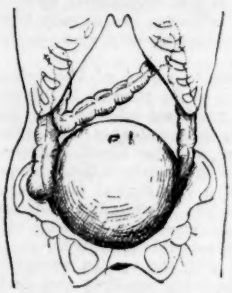
A GIRL, now aged 16 years, was in St. Thomas's Hospital as an infant because of a congenital abnormality of her rectum. Nothing was done at the time, but her mother was advised to bring her to the hospital when she was a few years old for operative treatment. As the child's general health remained very good this was not done. Her first stool was passed three days after birth, and she became gradually more and more constipated, until, at the age of eight, a month or six weeks frequently elapsed before she opened her bowels. Sometimes after an unusually long period of constipation, fluid fæces would run away from her constantly for about a week. She had also occasional attacks of pain, but her appetite was always good, her tongue clean, and her colour good. She was well developed and was accustomed to take plenty of exercise in the open air. Medical advice was never sought for her until Dec. 15th, 1907, when she was admitted into the Royal Surrey County Hospital, Guildford, under the care of Mr. H. B. Butler. Her temperature was 102° F. and her pulse was 120. Her tongue was furred and she looked ill. She complained of severe abdominal pain. The abdomen moved well on respiration, but it was very tender, especially over the right side. A hard, non-fluctuating tumour, dull on percussion, was found coming up from the pelvis; it resembled in size and position a uterus at the sixth month of pregnancy. On examination under an anæsthetic it was discovered that the patient had no anal canal, her rectum and vagina ending in a common cloaca. The rectum was found to be full of fæces and it appeared probable that the whole tumour was fæcal. A quantity sufficient to fill three large kidney dishes was removed by a blunt spoon; the fæces contained several plum-stones. The tumour did not completely disappear, so aperients and enemata were given during the next three days, with the result that considerable quantities of fæces were evacuated. The temperature steadily fell and was normal on Dec. 18th. The tenderness had completely disappeared, but a tumour of the size of a cricket-ball was still present in the right iliac fossa. The temperature rose on the evening of the 18th and fluctuated between 99° and 101° until the 26th, when the patient was again anæsthetised and an incision was made over the mass. Coils of intestine were found adherent to each other and to the parietal peritoneum. A second more lateral incision was made, but the patient's condition did not warrant the long dissection which would have been necessary to penetrate between the intestinal loops in order to reach the tumour, so the first incision was closed and the second was packed with gauze. The pyrexia and pain now disappeared, and on Feb. 2nd the patient left the hospital apparently well, the wounds having healed and the tumour having disappeared.

On May 16th Mr. Butler was again called to see the patient, whose temperature was 102°. A painful swelling was found in the right iliac fossa. She was readmitted into the Royal Surrey County Hospital and an incision was made over the mass, which was found to be an intraperitoneal abscess. This was evacuated and the wound soon closed and the temperature fell to normal. On August 8th the abdominal tumour had reappeared, the bowels not having been opened since May 16th. She was sent to Guy's Hospital, where she was admitted under the care of Dr. A. F. Hertz. She looked the picture of health, was well nourished, with a good colour, healthy skin, moist clean tongue, and good teeth. Her appetite was excellent. The lower part of the abdomen was completely filled with a very hard tumour, well-defined above and laterally, rising out of the pelvis to a distance of seven

inches above the pubes, its transverse diameter being eight inches. It was not fixed to the abdominal wall and could be displaced by manipulation as much as the crowded condition of the pelvis allowed. It was dull on percussion and could be pitted by prolonged pressure with the finger, the depression remaining for some time. The urine contained no albumin, pus or casts, and the circulatory, respiratory and nervous systems were quite normal. By means of a bismuth meal it was found that the cæcum, ascending colon, transverse colon and descending colon were normal in size and position, except that the transverse colon was pushed upwards by the tumour. The rate with which the bismuth traversed the colon was also normal. The shadow ended about one and a half inches below the left iliac crest, where the iliac colon apparently joined the enormously distended pelvic colon and rectum, which together formed the sac filled



with fæces. The accompanying illustration shows somewhat diagrammatically the relation of the sac containing the fæces with the rest of the colon, as ascertained by the skiagraphic examination

On August 12th the patient was anæsthetised and placed in the lithotomy position. By means of two fingers inserted into the rectum and pressure exerted from outside on the tumour the fæcal mass was slowly dug away; subsequently a tube was introduced into the rectum and the irrigation, combined with the use of the finger, enabled the whole accumulation to be removed. The colon was then irrigated until, two hours after the manipulations had begun, the water came away perfectly clear. By weighing the patient before and after the operation it was found that five pounds of fæces had been removed. The fæcal tumour having now been removed, it was possible to investigate more accurately the nature of the congenital abnormality. There was no trace of an anus, anal canal, or sphincter, the rectum opening into the posterior part of a cloaca. The opening had at first admitted one finger only, but it had been stretched until two fingers could be introduced into the rectum. The latter was separated by a transverse fibrous septum from two vaginæ, which were separated from each other by a median septum, which joined the transverse septum posteriorly. A cervix was found in both vaginæ, but only one uterus could be felt; the greater part of the latter was on the right of the middle line. Probably the septum between the vaginæ was continued into the uterus, the condition being that of "uterus bilocularis." The patient was ordered abdominal massage and faradism and was put on a full diet and allowed to get up. She was given strychnine and cascara sagrada. Whenever her bowels were not opened for 48 hours she was given an enema of cold water. The patient unfortunately insisted on leaving the hospital within a week of the removal of the fæcal accumulation, so that there was no time to ascertain whether the treatment would be effective. Although her mother was instructed to give her enemata regularly she failed to do so. It was, therefore, not surprising that the fæces began to re-accumulate in the rectal sac. When seen on Oct. 24th a large fæcal tumour was again present in the abdomen, somewhat smaller than on the last occasion, and situated more in the left than in the right half of the lower part of the abdomen. In spite of the retention of fæces the patient looked and felt exceedingly well, and was able to walk 12 miles without fatigue. She was, however, much troubled by the continuous escape of small quantities of fluid fæces, apart from which she was unable to produce any evacuation.

The patient was readmitted into Guy's Hospital under the care of Mr. Arbuthnot Lane on Oct. 30th. On Nov. 2nd the fæcal accumulation was again removed under an anæsthetic by the finger with the aid of continuous irrigation, the process lasting two hours. The next day Mr. Lane operated by an incision through the left rectus. The largely dilated and hypertrophied gut was exposed and divided about four inches from its lower extremity, the distal portion being closed and dropped into the pelvis. The proximal portion was pulled out of the wound till the residual bowel was taut. It was then sewn in position, means being taken to constrict the orifice sufficiently. At the operation the lower end of the large intestine was found to have contracted to a considerable extent. It was completely free from all adhesions and the mucous membrane of the excised portion was subsequently found to be quite normal. Adhesions were seen in the right iliac fossa; it appears probable that the abscess previously opened in this situation was appendicular in origin and quite independent of the fæcal tumour. The abdominal examination showed that only a single, apparently normal, uterus was present. The patient made an uninterrupted recovery and was discharged on Nov. 27th. At the end of March, 1909, she was perfectly well and very pleased with the result of the operation.

Apart from the remarkable size of the fæcal tumour and the interesting developmental abnormalities, the case is noteworthy as showing how in some cases prolonged retention of large quantities of fæces may occur without producing any anatomical or functional changes. Thus there were no adhesions round the distended intestine; the musculature had not suffered greatly in spite of the long period during which it had been greatly stretched, as the gut was found at the operation to be contracted down almost to the normal size; and the mucous membrane was found to be perfectly healthy on both naked-eye and microscopical examination. Lastly, the patient at no period showed the smallest signs of auto-intoxication, her complexion being excellent, her nutrition good, and her mental and bodily activity quite normal.

DELAYED DELIVERY IN A CASE OF CENTRAL PLACENTA PRÆVIA,

WITH REMARKS ON THE TREATMENT OF THE LATTER.

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ON April 17th, 1907, I was called to a woman who was in labour and had been flooding freely. She was a multipara, aged 40 years, and had had 13 full-time confinements and one abortion at three months. In her first labour instruments were used and the perineum was badly ruptured. She said she had "carried all her children high" and the labours were "long and dry." When seen the patient had evidently bled very freely, though the exact quantity of blood lost could not be ascertained. She was blanched and the radial pulse could only just be distinguished. She considered that she was eight months pregnant. On examination the placenta was felt presenting through an os about the size of a five-shilling piece. It could not be determined in which direction the nearest edge of the placenta lay. There were no pains. A saline rectal injection was given, the patient directed to drink freely, and one drachm of liquid extract of ergot administered, as there seemed to be no possibility of any obstruction, and the labour was rather premature. A few hours later the pulse was considerably better, in spite of the fact that the patient had been vomiting. The whole hand was then inserted into the vagina (which was more easily performed than usual on account of the old rupture of the perineum) and the full length of two fingers inserted through the os, but still, on sweeping round the entire circumference of the latter, no indication of the edge of the placenta could be found.

Three courses were now open: (1) to put the whole hand through the os uteri, and so reach the edge of the placenta for the purpose of turning; (2) to try to deliver the placenta first (after Sir James Simpson); this would also need a hand through the os uteri; and (3) to perforate the placenta. The latter procedure was adopted as being the most suitable, as the patient was not under an anæsthetic, neither was she in a

very good condition to take one; also the os was not as yet fully dilated. A hole was scratched through the placenta with the finger and the head found presenting. The bleeding was very slight. Bimanual version was then performed. This was very difficult and took some time, as the hole in the placenta was only made big enough to admit two fingers, and the fœtal parts could only be distinguished with great difficulty by the extreme tips of these fingers. As soon as a foot could be felt an attempt was made to rupture the membranes on the fœtal aspect of the placenta, but without success, as they were very tough. The rupture was accomplished, however, with the help of a pair of rather sharp-pointed uterine forceps. The hole in the membranes and placenta was stretched bigger by opening the blades of these forceps. This allowed some liquor to escape and the leg was then brought down. After placing a tape round the foot the patient was left, as there were still no signs of any pains. Eight hours later it was found that the leg had only very slightly advanced. A few slight pains had been present, but had passed off again. The patient's pulse was 120 and very weak and she had been continually losing a little blood. An examination showed that the hole made in the placenta, which was bounded by what felt like moderate-sized vessels or strands of placental tissue, was too small to let the half-breech freely descend, as the latter was tightly embraced all round. The hole was accordingly freely torn larger with the fingers and gentle traction applied to the leg. The child was then delivered in about 15 minutes and was found to be dead. After waiting half an hour the placenta did not come away, though one edge could be felt in the vagina. The uterus was then explored and found to be irregularly contracted, retaining one portion of the placenta which was also slightly adherent. After the placenta had been completely removed and a uterine douche given the womb contracted well.

On examination of the placenta after delivery it was found to be situated approximately in a central position, as the presenting part nearly corresponded to the place of insertion of the cord, which was in the middle of its fœtal surface. The rent made through the placenta had, however, extended to the edge during the process of delivery. The placenta was not observed to be exceptionally large in extent, though this would be expected from the fact that one edge was found to be adherent to the uterine wall near the fundus, whilst the opposite edge was free in the vagina. This point should have been more exactly observed, and I can only plead in extenuation that early morning hours in a comfortless and none too clean tenement are not conducive to exact pathological observation.

The after-history of the case was as follows. There was slight pyrexia for two days, which then subsided. Later the patient had some thrombosis in the right femoral vein which delayed complete recovery. At the time of writing (three months after delivery) she is getting about and doing her work as usual.

The chief points of interest in this case may be briefly summarised as follows:—

1. *The very central position of the placenta.*—I have not come across any records of series of cases indicating the rarity of this central position, with the exception of a small series of 34 cases of placenta prævia recorded by Sinnetamby,[1] and of these only one was central. If one may judge by the scanty attention given by most text-books to the subject of the treatment of placenta prævia when thus centrally situated, this position is of considerable rarity.

2. *The delay in delivery*, apparently due chiefly to the fact that the hole in the placenta and membranes was not, in the first instance, made sufficiently large to allow the half-breech to descend freely. This is a cause of delay to which attention has not yet been called, as far as I am aware. The half-breech generally forms an admirable dilator and stimulator of the cervix, but in this case it was held up by the placenta, so that only the thinner part of the thigh was through the os, and this part was not of sufficient girth to stretch and stimulate it. The placenta was of normal thickness and therefore was not easily torn or moulded round the half-breech as a thinner one might have been by such very feeble pains as the patient was having.

3. *The inertia of the uterus.*—This is common in such cases and is due to the weak and anæmic state of the patient, the want of the normal stimulation of the cervix, and possibly to some disturbance of the uterine "polarity" due to the abnormal placental implantation and to the frequent prematurity of the labour.

4. *The retention of the placenta.*—This may very easily be explained in this case by the irregular and feeble contraction of the uterus. This retention is more common in cases of placenta prævia than in normal labours, as is emphasised by De Lee.[2] In two cases of central placenta prævia recorded by Peters[3] the placenta had to be removed manually in both. In the present case a dose of ergot was given when the patient was first seen, and it is doubtful whether the irregular or hour-glass contraction observed 12 hours later was *post hoc* or *propter hoc*. It may have been due to the disturbed polarity alluded to above.

5. *The value of saline injections* was well illustrated in this case. This is also emphasised by Sinnetamby[4] in the paper to which reference has already been made; at the same time he advocates very slow delivery in cases of placenta prævia.

6. *The very slight amount of hæmorrhage* which accompanied perforation of the placenta in this case.

7. Lastly, *the treatment adopted*—viz., perforation of the placenta as far as the membranes, bipolar version, perforation of the membranes, and slow breech delivery.

On referring to the text-book instructions, Galabin[5] says: "In the case of a very central placental insertion it may be necessary before performing the actual version to rupture the membranes along the edge of the placenta, to draw that edge downwards towards the centre of the os, and then to proceed with the version as rapidly as possible"—i.e., Galabin apparently considers that perforation is never necessary. Jellett, in his excellent "Manual of Midwifery," does not mention the fact that the presence of the placenta causes any difficulty in performing bimanual version. Braun von Fernwald,[6] in a paper on the Treatment of Placenta Prævia, advises separation of the placenta from the lower uterine segment till the membranes are reached—practically the same as Galabin. He also mentions the slight risk of air embolism attending this procedure. Palmer[7] mentions two cases of central placenta prævia in which forceps were used, but in the majority of such cases the presence of the placenta would interfere very much with their application, and it is extremely unlikely in such cases for serious hæmorrhage to be delayed till the os uteri is enough dilated for forceps.

Sir James Simpson recommended complete separation of the placenta and its delivery before the fœtus in certain cases, and it would seem that centrally situated placentæ are the most suitable for this form of treatment, as they have to be so very largely detached before the fœtus can be delivered. Also it appears that spontaneous delivery of the placenta first, which sometimes occurs, and which gave rise to this form of treatment, occurs more often when the placental site is very low, and this is only to be expected when one considers that the tendency would then be for the presenting part to push the placenta before it. R. Barnes[8] recommended digital separation of the placenta around the whole circumference of the os uteri, and in the case of a centrally situated placenta this treatment approaches to that of Sir James Simpson alluded to above. It must be noted, however, in these cases that the placenta is often very large in extent, and so reaches a good way from the os uteri in all directions, so that it is unlikely that complete separation could be accomplished with the fingers only through the os. Peters, in the record of his two cases of central placenta prævia, mentions that perforation often causes serious hæmorrhage. R. Barnes[9] says on this subject "we can imagine a case in which perforation might be *excused*." Finally, we may gather from the above views that the general opinion is that perforation of the placenta is rarely, if ever, needed. In spite of this, it is difficult to see what better could have been done, in the exigencies of general practice, for a case such as that upon which these remarks are based.

Shrewsbury.

[1] Journal of Obstetrics and Gynæcology, 1904.

[2] American Gynecological Journal, 1902.
[3] Centralblatt für Gynäkologie, No. 16, 1902.
[4] Loc. cit.
[5] Text-book of Midwifery, p. 433.
[6] Wiener Klinische Rundschau, 1903.
[7] American Journal of Obstetrics, 1903.
[8] Obstetrical Operations.
[9] Loc. cit.

ON THE TERMINATION OF THE THORACIC DUCT.

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THE wounding of the thoracic duct during operations at the root of the neck is an accident which, until quite recent years, was regarded as a very grave injury, usually followed by death. In the 1895 edition of Erichsen's "Surgery" it is stated that "the injury has been almost universally fatal." That this is not necessarily so has since been abundantly proved by the published cases, of which W. J. Stuart[1] has collected and tabulated 40. Of this series only five died, and even some of these five deaths appear to have been in no way due to the wounding of the thoracic duct. Stuart estimates the true mortality as probably not greater than 8 per cent., and it is interesting to note that amongst the cases in which the accident was recognised at the time of operation and the duct ligatured there was not a single fatality. In Keen's "Surgery" (1908) E. W. Andrews remarks that "if ligated, distension and rupture will follow unless collateral branches divert the flow;" and again, "ligation involves some theoretical risk, since with a single duct the patient must die unless it can discharge."

Such considerations led us to seek in the anatomy of the terminal portion of the duct some explanation as to why the older surgeons regarded a wound of the duct as such a serious accident, and why the ligation of the duct should appear to be in reality so free from danger. On referring to the literature we find that Poirier and Cunéo[2] state that the termination of the duct by two distinct branches is fairly frequent. Watson[3] says that sometimes the terminal part of the bend of the duct bifurcates and opens by two separate trunks into the subclavian vein. We have only been able to find two definite series of observations, one by Verneuil[4] and the other by Wendel.[5] The former found that out of 24 cases the duct was single in 18, double in 3, triple in 2, and six-fold in 1. The latter found that out of 17 cases, it was single in 9, double in 3, three-fold in 1, and multiple in 4.

We now submit a further series of anatomical observations, based upon 40 records, 36 of which are from subjects within 24 hours of death, 1 from a living case in which the termination of the duct was exposed but not cut in the course of an operation, and 3 from careful dissections of formalin-hardened specimens. Our plan was to isolate the duct in the posterior mediastinum and inject it with coloured gelatin, after which it was followed up to its termination. We found that in 18 out of the 40 cases the duct divided and that this division usually occurred while it was lying behind the left common carotid artery about 5 centimetres from its opening. In one case, however, the division only took place 8 millimetres from the termination, while in another the duct was double for 2 centimetres.

As a rule the duct divided into two branches of about equal size, though when they were unequal the upper—i.e., the one most liable to injury—was usually the larger. This we noticed six times and we met with no cases in which the lower branch was markedly larger than the upper. In three out of the 18 cases of bifurcating ducts one of the two branches divided again and the three ducts thus formed communicated with one another by anastomosing channels, so that a wide-meshed plexiform arrangement was present. In two others the division was still more free and there were four openings into the great veins.

It does not follow that because the duct divides before its termination it necessarily has more than one opening into the veins. In only nine of the 18 double or multiple ducts was this the case; in the other nine the branches united, sometimes in the wall of the vein, but more often before reaching it, and so only one aperture was present. When there was only one opening, whether the duct had been single or double before (we opened the veins in an extra specimen to make up for the one seen during life which, of course, could not be opened), that opening was usually into the lower part of the internal jugular vein below and often under cover of the left flap of the valve which is there. This was the case in 26 of the 40 specimens, and the material at our disposal leaves us little room to doubt that it is normal. In three cases the opening was anywhere between the point of junction of the two veins and one centimetre above, but in addition to these 26 there were two other specimens in which the openings were respectively 19 millimetres and 25 millimetres above the junction.

Only three times were we able to satisfy ourselves that the opening was really into the junction of the internal jugular and subclavian vein. Of the nine cases in which the duct had two or more openings four had two openings close together and one had four openings close together in the normal place—i.e., into the lower part of the internal jugular within one centimetre of its junction with the subclavian. One had one opening in the normal place and another higher up in the internal jugular above the valve. Two had one opening in the normal place and another into the subclavian. One had one opening in the normal place and three others close together in the subclavian.

It is interesting to notice that in only three out of our 40 cases did the duct open partly into the internal jugular and partly into the subclavian, because Lower[6] regarded this mode of termination as the normal. It is also worth while drawing attention to the fact that in only two of the 40 cases were more than two openings present, so that the case which Verneuil records in which there were six openings is probably a very rare one.

For convenience of reference we may tabulate the different methods of opening in the following way:—

A. Single ducts opening into the lower centimetre of the internal jugular vein	19
B. Single ducts opening into the junction of the internal jugular and subclavian veins	3
C. Double ducts joining and opening into the lower centimetre of the internal jugular	7
D. Double ducts joining and opening more than one centimetre above the junction of the internal jugular and subclavian	2
E. Double ducts with two openings into the lower centimetre of the internal jugular vein...	4
F. Double ducts with two openings, one into the lower centimetre of the internal jugular, the other into the same vein higher up	1
G. Double ducts with two openings, one into the lower centimetre of the internal jugular, the other into the subclavian vein	2
H. Multiple ducts with four openings all into the lower centimetre of the internal jugular vein	1
J. Multiple ducts with four openings, one into the lower centimetre of the internal jugular, the other three into the subclavian	1
Total	40

By adding together cases A, C, E, F, G, H, and J, it will be seen that in 35 cases out of the 40 cases the duct opened wholly or partly into the lower centimetre of the internal jugular. From the foregoing it will be noted that in nearly half our cases (18 out of 40) the duct was double and that if a surgeon accidentally divided one of these in the root of the neck it is unlikely that, provided the wound was occluded by ligature, any inconvenience would result. It is, of course, unwise to found a definite percentage on 40 cases, but our experience with statistics of other parts of the body makes us believe that the range of error is not likely to be very great, while the difficulties and tediousness of procuring suitable material, injecting and dissecting the specimens must serve as our apology for not presenting a larger series.

It does not follow that even if the duct does not divide in the neck its section must necessarily give rise to serious symptoms because it has been pointed out that occasionally there is a communication in the thorax between the thoracic duct and the right lymphatic duct, and if this were present

[1] Edinburgh Medical Journal, 1907.
[2] Leaf's Translation, 1903.
[3] Journal of Anatomy, vol. vi., p. 427.
[4] Le Système Veineux, 1855.
[5] Deutsche Zeitschrift für Chirurgie, Leipsic, 1898.
[6] Quoted by Poirier and Cunéo, loc. cit.

the chyle might be diverted to the veins of the right side. We did not find this communication injected in any of our specimens, but our dissection seldom went lower than the fifth thoracic vertebra. Moreover, the main duct has sometimes been found to open into one of the azygos veins.[7] No doubt the division of the thoracic duct in the neck is a remnant of its plexiform character in lower mammals, In the ox, for example, a plexiform termination is normal, according to Chauveau, while in the horse, pig, dog, and cat a division and reunion so as to form a ring is very common. The union between the thoracic and right lymphatic ducts is a repetition of the avian arrangement where the duct opens into the precaval veins of both sides.

In four out of our 18 cases of double ducts we noticed that the vertebral vein passed between them, which is not surprising when it is remembered that the duct sometimes passes in front of, and sometimes behind, the root of this vein. In one case the branches passed one in front of and one behind the first part of the subclavian artery; this was a specially plexiform termination and had four openings into the veins. As a rule, however, nothing passed between the two or more terminal branches when they were present.

The subclavian, jugular, and broncho-mediastinal ducts were seen on several occasions, though the injection never passed into them. The subclavian duct was most often seen and was always remarkable for being closely connected with a lymphatic gland of moderate size (from 1 to 2 centimetres) which lay near the outer border of the scalenus anticus. Out of 12 cases in which it was dissected out, this duct joined the thoracic duct in ten, while in the other two it opened separately just below the opening of that duct. The left jugular duct was seen ten times and in nine of these it opened into the thoracic duct. This observation is of little value, because in those other cases where the duct was not seen it probably opened somewhere else. In one of these cases there were two jugular ducts, one joining the thoracic duct and the other opening into the internal jugular vein a few millimetres higher up. The usual place for the jugular duct to join the thoracic duct was 1 to 2 centimetres from the termination of the latter. The broncho-mediastinal duct was only seen four times, and probably often opens separately into the great veins. In all these four cases it opened into the thoracic duct some distance from its termination.

During our investigations of the termination of the duct into the great veins it was necessary to open the latter, and in doing so we gained some definite knowledge of the jugular vein. In 32 out of the 40 cases the valve consisted of two pocket-shaped semilunar flaps which were almost always right and left, though the right one often had a tendency to be somewhat anterior and the left posterior. As a rule these two flaps were not set on quite horizontally, but their anterior ends were higher than their posterior. In most cases the valve was about one centimetre above the termination of the internal jugular, though in a few cases it was a good deal higher. Of the eight exceptional cases one showed complete absence of the valve and in another it was very rudimentary. In three specimens only one cusp was present, but that was in every case the left. In three specimens there were three cusps, and in all of these the extra cusp was very small and was situated on the posterior surface of the vein between the hinder attachments of the other two.

The actual opening of the thoracic duct was almost always obliquely through the wall of the vein and having a direction downward, forward, and to the right. Usually there was a dilatation in the venous wall forming a pouch resembling the ampulla of Vater in the duodenum, and the mouth of this, when the duct was empty, played the part of a valve or pair of valves. In a few cases the orifice was guarded by a permanent fold of endothelium, but more often the valves disappeared on stretching the wall of the vein and, though physiologically functional, could not be described as definite morphological structures. In three of the 40 cases the vertebral vein opened into the above-mentioned pouch, but in most of them it opened a little lower down into the back of the junction of the internal jugular with the subclavian vein. More rarely the opening was distinctly into the innominate vein, though seldom more than a few millimetres to the right of a line continuing down the inner margin of the internal jugular vein.

[7] Wendel, loc. cit.

The point of opening of the left superior intercostal vein was seen in almost every case and was always into the innominate below and to the right of the orifice of the vertebral. Its exact point of opening, however, varied greatly.

Summing up the contents of this communication, we noticed: 1. That the thoracic duct divided in the root of the neck in 18 out of 40 cases (nearly 50 per cent.) 2. In 9 of these it joined again, in 7 it opened by two orifices, and in 2 by four orifices. 3. In 35 of the 40 cases (87·5 per cent.) the duct opened wholly or partly into the lower centimetre of the internal jugular vein. 4. That it usually opened into a pouch and that the opening of this acted as a valve, though a definite morphological valve was only occasionally seen. 5. That the duct passed sometimes in front, sometimes behind, and sometimes on both sides of the vertebral vein. 6. That the internal jugular valve was a very constant bicuspid structure rarely absent, but occasionally tricuspid or unicuspid. Comparing our results with those of the two smaller series referred to, we find that our proportion of multiple ducts is much greater than that of Verneuil, ours being 18 out of 40 and his being only 6 out of 24; whilst our figures agree closely with those of Wendel, 8 multiple out of 17, who also used injected ducts for his dissections.

We conclude that, as there appear to be multiple ducts in nearly half of all cases, some at least of the reported cases of injury must have involved damage to a division and not to the whole duct, the ligature of which would cause no serious hindrance to the chylous flow into the veins. In the few cases which have recovered spontaneously after chylorrhœa of many days, or even weeks, it is probable that a second channel already existed, either of the common kind which we have described or of some rarer sort, such as a large communication with an azygos or some other vein.

EPSOM SALTS AS A POISON:

WITH A RECORD OF A CASE OF UNUSUAL SYMPTOMS DUE TO THIS DRUG.

BY CHARLES FRASER, M.A., M.D. EDIN., D.P.H. CAMB.

As a therapeutic agent Epsom salts are commonly considered to be particularly free from danger. There are, however, records of six cases in which the administration of the drug was followed by untoward symptoms of a very grave character, five of these rapidly terminating fatally. There appears to be considerable room for debate as to the manner in which the salt exerts its morbid effects. In registering another case of "poisoning" by this drug I have for purposes of comparison and contrast appended summarised reports of these six cases, and at the same time I have ventured to offer suggestions as to the probable modes of action of the drug.

At 2.30 P.M. on August 19th, 1908, I was summoned to see a boy, aged three and a half years. The patient's mother stated that 25 hours previously, during her temporary absence from the room, the patient had taken a heaped-up tea-spoonful of Epsom salts from a packet which he had found lying on the table, imagining it to be sugar. Finding his mistake, but wishing to remove traces of his guilt, the little fellow washed the salts down with a mouthful of milk. On returning to the room a few minutes later she found him retching and apparently suffering considerable pain in the stomach. Nausea and retching continued throughout the day. About 7 P.M. the abdominal pain, which was of a griping, spasmodic character, was very severe, and actual vomiting became a prominent symptom. Thirst was also very distressing. There had been no action of the bowels. At this stage a pharmaceutical chemist was consulted who prescribed castor oil; this was at once rejected. Throughout the night the patient continued to suffer severe pain and vomited at frequent intervals. No further assistance or advice was sought until 2.30 P.M., although in the meantime the child had rapidly become worse.

The boy was now obviously critically ill. He lay in bed on his back, his face pinched, eyes sunken, and skin pale. His mind was perfectly clear. About every two minutes he had colicky attacks which made him draw up his legs. The temperature was 100·5° F.; pulse 160 and small; tongue was very dry, the papillæ standing out prominently. Thirst was intense; the bowels had not acted. About half an ounce of urine

had been passed during the 24 hours. The abdomen was very distended and rigid; the skin was markedly hyperæsthetic, so much so that palpation was performed with difficulty. This hyperæsthesia was least over the epigastric region, where the percussion note was tympanitic; in both iliac regions and in the hypogastrium it was dull. A catheter was passed and about half an ounce of dark muddy urine was drawn off which contained no albumin and was very acid. At 9.30 P.M. the patient seemed weaker; he was still very sick, vomiting every few minutes small quantities of greenish-yellow stuff which had no characteristic odour. The bowels had not acted; temperature was still 100·5° and the pulse 160. The distension was more pronounced; the percussion note was more generally tympanitic, the dulness being limited to the left iliac region. At 2.30 A.M. on the next day vomiting was as incessant as before; neither bowels nor kidneys had acted; the pulse was uncountable and the temperature 100·5°. There seemed, however, to be rather less tenderness on palpating the abdomen and the dulness was still limited to the left iliac region; the liver dulness seemed normal. The symptoms and appearances being suggestive of acute peritonitis, laparotomy was deemed advisable and the patient was at once removed to the Sussex County Hospital.

For the following notes I am indebted to the kindness of Mr. A. H. Buck, under whose care the patient was admitted.

"On admission the child was collapsed; temperature sub-normal; pupils dilated; pulse 160; abdomen rigid and retracted with very slight movement. Laparotomy performed about 3.30 A.M. Central incision made; on opening abdomen intestines floated up into the epigastrium; about two pints of blood-stained serum let out; no lymph; no smell. (This blood-stained serum was submitted to the pathologist, who reported that it was sterile.) Large intestine drawn out and lumps of fæces and gas present; appendix healthy; through small intestine green matter seen as in vomit; bladder was felt to contain about half an ounce of urine. No cause for obstruction found. Drained with rubber tube and gauze plug.

First 24 hours.—Temperature rose to 100·6°; pulse about 170; child very ill and restless; vomited frequently, bright-green stuff at first and later yellow; no fæces or flatus passed in spite of enemata; constantly cried for something to drink; quantities of blood-stained serum continued to drain away; dressing changed four-hourly; child moribund; fed on albumin water and brandy, and rectal saline not retained.

Second 24 hours.—Child still moribund; pulse practically uncountable; saline into subcutaneous tissues of axilla given, after which child seemed better and slept; still sick, but this symptom subsided later. Half grain of calomel given every hour; temperature 101·5°. In the afternoon flatus and fæces passed and again after enema; catheter passed at 9 P.M. and one ounce urine drawn off.

Third day.—Bowels opened frequently; urine passed naturally; temperature falls to normal; child much better; wound healing; no discharge from wound.

The child now made an uninterrupted and complete recovery."

Remarks.—That the illness was directly due to the salts will at once be conceded. The child had been in perfect health up to the moment of taking the dose. He then became acutely ill. Now a medium-sized teaspoonful of Epsom salts is found to weigh about half an ounce—a very large dose for a child of this age. The earliest symptoms, as one would expect, were those of gastric irritation, undoubtedly produced by the action of the undissolved salt. The condition of shock which developed later might conceivably have been due to the same cause, the violent stimulation of the sensory nerve endings in the stomach-wall leading to vaso-motor paralysis, splanchnic engorgement, and depletion of the rest of the body. The nervous system being also in a state of tension owing to the fear of punishment would possibly tend to make the liability to shock greater. Having no corrosive properties Epsom salts could not give rise to perforation of the stomach wall. The appearance, therefore, of symptoms of acute peritonitis was probably due to some mischief further along the alimentary tract. The fact that on opening the abdominal cavity no peritonitis was found did not simplify matters, and the presence of blood-stained serum in the absence of any likely cause for intestinal obstruction made diagnosis still more difficult. The suggestion has been offered that as a result of taking the salts there may have been a volvulus or intussusception causing the effusion of serum. This volvulus or intussusception, it has been urged, could very easily be reduced during the operation (or as the result of the anæsthetic before the abdomen was opened) without being recognised and without necessarily leaving any evidence of its having been there.

Against intussusception is the fact that there were no purging and no tenesmus. The bowels had, in fact, not acted at all. The occurrence of volvulus, on the other hand, is compatible with the violent retching and vomiting. The diagnosis of the condition is notoriously difficult at all times. Whilst this theory, however, accounts for most of the symptoms and appearances prior to the operation it is less easy to reconcile it with the condition of things during the first 24 hours after operation. The persistence of the constipation, the result of paralysis of the bowel, might have been a feature of that state of depression of all the vital functions which is incidental to the condition of shock. The vomiting, however, is not so readily explained. But in the absence of any other explanation of the presence of blood-stained fluid in the abdominal cavity one feels disposed to accept this view.

The extreme rarity with which cases of poisoning by Epsom salts occur is illustrated by the fact that the following six records embrace a period extending from 1841 to 1896. After a pretty thorough perusal of likely sources of information I have failed to trace any other case. This is all the more surprising when one considers the extreme frequency with which the drug is administered and the heroic manner in which it is often dispensed.

CASE 1 (*Taylor's case*).—An old man whose bibulous habits were well known to his neighbours became the victim of a practical joke at the hands of two of his associates. These men, it appeared, added very large quantities of Epsom salts to his beer. On drinking several pints of this medicated stuff he was suddenly seized with violent purging and died in 48 hours. The mucous membrane of the alimentary canal was found to be inflamed and Taylor adds "there was no doubt that death was due to the irritant effect."[1]

The fatal issue here appears to have been due to the purgative action of the irritant. By causing very rapid loss of fluid from the body it gave rise to the condition of collapse, and the fatal result was doubtless accelerated by the degenerated condition of aged and alcohol-poisoned tissues. This case is the least interesting of the group. The action described is not peculiar to this salt but is common to all cathartics when administered in very large doses. The case, however, is referred to in the older books on toxicology as a classical instance of poisoning by Epsom salts.

CASE 2 (*Christison's case*).—A boy, aged 10 years, was given two ounces of salts, partly dissolved and partly mixed in a cupful of water, by his father, who thought that he was suffering from worms. Immediately on swallowing it he was noticed to stagger and fall. When seen by his medical attendant half an hour later the breathing was slow and difficult, the pulse was imperceptible, and the whole frame seemed to be in a condition of great debility. He died in 40 minutes. There had been no vomiting or purging and there were no morbid appearances after death. "This case shows," says Christison, "that in certain circumstances the laxative neutral salts may be irritating enough to cause death."[2]

One may reasonably infer from this history that death was due to syncope. The large dose—the morbid action of which was, no doubt, intensified by the fact that part of it was undissolved—on coming into contact with the stomach wall of a very youthful subject initiated powerful afferent impulses which reflexly brought about that cardiac exhaustion which is a prominent feature of the case.

CASE 3 (*Neale's case*).—A boy, aged 15 years, took one ounce of salts in solution on an empty stomach 24 hours before he came under the physician's observation. There had been three very small motions. A few hours after he had taken the dose he felt sick and this symptom continued throughout the night. The following day he tried to work but had to give up the attempt. Vomiting continued at frequent intervals. When first seen he was lying in an

[1] Taylor: On Poisons, p. 4.
[2] Christison: On Poisons, p. 574.

attitude of flexion, was very cyanosed, and had severe attacks of tetanic spasms affecting the right side of the face and arm. The urine was dribbling away, the pulse was imperceptible, and the temperature was 105° F. At frequent intervals he vomited greenish fluid. The next day he seemed much better and 40 ounces of urine were drawn off, and in a week he was completely well.[3]

This case in some respects resembles the one I have recorded, and there is something to be said in favour of the same diagnosis. The delayed sickness and its persistent character, the fact that there was some action of the bowels with possibly considerable tenesmus, and to some extent the age of the patient are in favour of the view that the symptoms may have been due to intestinal obstruction—probably intussusception. The delay of some hours in the onset of symptoms of any sort, the moderation of the dose relative to the age of the patient, and the fact that it was in solution are opposed to the view that the action may have been that of an irritant poison. On the other hand, one may attribute at least some of the symptoms to a toxic action, the tetanic spasms affecting the right side of the face and arm being due to a selective action of the salt on the cells in the motor cortex.

CASE 4.—A woman took four ounces of salts at one draught and died an hour later. The case having occurred in Scotland no inquest was held and the death was certified as due to paralysis resulting from an overdose of salts.[4]

The data are insufficient to enable one to form a definite opinion as to the action of the salt in this case. That it was of an irritant nature and gave rise to syncope, as in Case 2, is possible. This irritant effect would be enhanced if the salts were only partially dissolved—a condition of things one may, from the magnitude of the dose, reasonably infer to have actually existed. On the other hand, the "paralysis," if the term is to be accepted as of any value, is suggestive of a toxic influence on absorption into the blood. "Complete paralysis" was observed in Case 6, and "paralytic effects" have been noted when the salt has been experimentally injected into the blood of animals.

CASE 5 (*Luff's case*).—A woman, aged 20 years, was found in the morning dead on her bed, which had apparently not been slept in. Death had taken place some hours before the discovery. At the post-mortem examination no inflammation of the mucous membrane of the stomach was found, but the organ contained about one and a half ounces of a solution of Epsom salts. It was ascertained that she had purchased an ounce of salts on the previous day and had taken it on an empty stomach. Death in this case was said to be due to syncope.[5]

It is very difficult to explain the action of the salts in this case. Bearing in mind the age of the victim the dose was by no means a large one. Idiosyncrasy was probably a factor of importance and the fatal syncope may have resulted from direct poisoning of vital centres on absorption.

CASE 6 (*Sang's case*).—A woman, aged 35 years, took four ounces of salts in warm water to bring on the monthly period. On swallowing the dose she complained of burning pain in the stomach and bowels; had difficulty in breathing and a choking feeling; also a sensation as if the power were leaving the legs. The tongue and mucous membrane were normal. There was no sickness, vomiting, or purging. The pulse was 98; the pupils were dilated. There was at times slight twitching of the face, but complete paralysis rapidly ensued, the patient becoming comatose and dying 75 minutes after taking the dose.[6]

The history of this case points strongly in favour of the toxic theory. The preliminary irritation of the stomach, although very considerable, was apparently not sufficient to cause vomiting. Absorption consequently took place all the more readily. Dr. W. Sang attributes the symptoms to "a direct action on the cerebro-spinal system." This comment raises the question as to whether the action is a central or a peripheral one. Observers who have approached the question from the scientific and experimental point of view have found that the paralyses produced by the injection of the drug into the blood of animals are due to peripheral disturbances. Clinical data, on the other hand, are more readily satisfied if we assume that the action is a central one.

[3] Pharmaceutical Journal, 1896, p. 235.
[4] Brit. Med. Jour., vol. ii., 1891.
[5] Ibid.
[6] THE LANCET, Nov. 7th, 1891, p. 1037.

In concluding this paper may I briefly refer to two modern uses of this very common drug. Bearing in mind its very irritating effect under certain conditions on sensitive surfaces, such as the mucous membrane of the stomach, it is interesting to observe that sulphate of magnesium is now being used in saturated watery solution as a local application to relieve pain. In cases of orchitis, epididymitis, gonorrhœal rheumatism much benefit is said to have been derived. After several applications blanching of the parts has been noted, and the subsidence of pain is probably due to the lessened congestion. The "paralytic" effects already referred to may be studied in conjunction with the treatment of tetanus by the administration of this drug. The intradural injection of the salt in 25 per cent. watery solution at intervals of four or five days is said to be followed by "prompt subsidence of spasm, lowering of temperature, and improvement in general condition." It is not claimed that the drug has any specific action on the tetanus toxin. The treatment is considered to be purely symptomatic, the removal of spasm giving the tissues the opportunity of recovering from the exhaustion produced by the former spasms.

Brighton.

A CASE OF ANOMALOUS ŒDEMA WITH BRIGHT'S DISEASE.

BY R. W. S. WALKER, M.R.C.S. ENG., L.R.C.P. LOND.,
LATE HOUSE PHYSICIAN, UNIVERSITY COLLEGE HOSPITAL.

THE patient, an unmarried woman, aged 24 years, sought advice owing to a tumour in the right popliteal space with swelling of the leg below it. At the age of eight years she had scarlet fever, and between eight and 16 years several severe influenzal colds. Eight years ago she noticed a swelling of the right ankle; the onset was gradual and she had not suffered to her knowledge from any serious disease for some time prior to this. During the next three years this swelling, which appears to have been of an œdematous nature, spread upwards to the knee; it always became more marked when she had been standing for any length of time, and would sometimes disappear completely during the night. Five years ago she noticed that the space behind the knee began to swell, and from that time a tumour formed which has grown progressively larger. (Fig. 1.) Œdema of the leg below has since been practically constant. Two years ago swelling of the left ankle commenced; this has also spread upwards and has reached the knee. It was only present when she had been walking or standing, as in the early œdema of the right leg, and disappeared with rest. During the eight years described above she enjoyed on the whole very good health, save that she suffered at times from severe headaches and

Shows the swelling behind the knee.

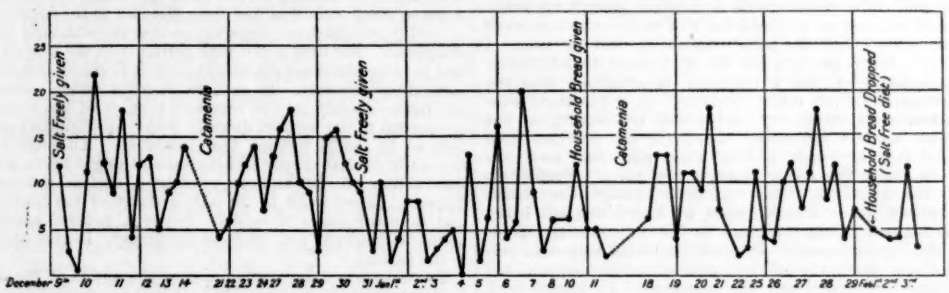
was easily fatigued owing to the weight of her right leg. She stated that she had had no œdema elsewhere save in the positions described above.

When admitted to the hospital on Nov. 12th she had a large pedunculated tumour in the right popliteal space. It was freely moveable and closely simulated a lipoma in outline and consistency, except that on firm pressure it pitted. Below

this tumour there was œdema of the leg, while above it the thigh was normal. Whilst resting no œdema of the left leg was present, but it developed after she had been walking about several hours and always rapidly disappeared. No local cause was discovered, neither was there anything in her past history to suggest thrombosis. In general appearance she was a healthy, well-developed woman; anæmia was not present and she was not cachectic. She had no cardio-vascular changes. The heart's apex beat was in the fifth space and was not dislocated outwards, while on auscultation the pulmonary second sonnd was louder than the aortic second sound. Ophthalmoscopic examination revealed no changes in the discs, and the average blood pressure was between 120–130 mm. of Hg. For the first two days of her stay in hospital no albumin was found in the urine; on the third day it was present in large quantities. Microscopic examination revealed the presence of hyaline and granular casts; while the proteids were found to be albumin and globulin; no albumoses were present. On two other occasions, on Nov. 19th and Jan. 4th, the urine had been free from albumin. Between Nov. 12th and Dec. 9th one specimen of urine was tested daily for albumin by being boiled and acidified with acetic acid. The amount of albumin present was found to vary within very wide limits. On some days the urine boiled solid, on others only a faint cloud would be present, so that from Dec. 9th until her discharge, whenever practicable, the percentages of albumin were tested by Esbach's method. Three specimens daily were usually examined and the fluctuation in the amount of albumin present was noted. (See Chart.) The average quantity of urine voided daily was between 25 and 26 ounces; the maximum quantity observed during her residence in hospital was 40 ounces. With rest in bed the œdema of the right leg and the œdematous mass in the popliteal space would almost disappear, but whenever she was allowed to walk about the swelling would speedily regain its original proportions. On Dec. 30th the patient was placed on a rigidly salt-free diet and it was then found that the œdema rapidly subsided, though she was allowed to take exercise as before. Since then to the date of her discharge on Feb. 4th she has been confined to food containing no salt or to a diet containing household bread instead of salt-free bread, and no return of the œdema was observed, though, as would be expected, the amount of albumin present in the urine varied widely as before.

Several interesting features were presented by this case. The most prominent was the localisation of the œdema, the main position of which was in the right popliteal space, and the fact that for six years it was unilateral. In addition the entire absence of cardio-vascular changes secondary to the lesion in the kidneys is noteworthy, together with the fact that on four separate occasions albumin was completely absent from the urine. In spite of the large amount of albumin lost daily her general health was very good and she exhibited none of the anæmia and cachexia so frequently present in patients suffering from chronic Bright's disease.

In conclusion, I have to thank Dr. J. Rose Bradford for his courtesy in permitting me to publish in more detail the features of this case, a short account of which has appeared in the Proceedings of the Royal Society of Medicine.



The figures on the vertical column indicate the number of grammes of albumin excreted per litre of urine.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

THE TREATMENT OF BRONCHIECTASIS BY THE CONTINUOUS INHALATION OF OXYGEN (STOKER'S METHOD).

BY W. P. HERRINGHAM, M.D. OXON., F.R.C.P. LOND.,
PHYSICIAN TO, AND LECTURER ON FORENSIC MEDICINE AT, ST. BARTHOLOMEW'S HOSPITAL.

A YOUTH, aged 20 years, was admitted into St. Bartholomew's Hospital, under my care, on Oct. 20th, 1908. He was a small, ill-developed, thin fellow. He had had no illness until 18 months ago, when, while ship's cook on board a trawler, he had been seized with an illness the leading symptoms of which were cough and pain in the side. He had never been well since, and had for a long time been spitting a copious and offensive discharge. The left side of the chest was shrunken and the heart was drawn outwards. The lower part of it was very dull, and resonance in the upper part was impaired. There were signs of a cavity near the apex and râles all over the rest of the lung. The temperature was normal; the sputum was repeatedly examined for tubercle bacilli without result, and tuberculin injections of 1-400th and of 1-200th cubic centimetre (O. T.) produced no rise of temperature. An injection of 1-80, which was given three days later, was followed by a fever lasting three days, the temperature reaching 104° F., which I believed to be due to some other infection. Calmette's reaction was negative. The sputum was full of staphylococci and streptococci, and at first amounted to from 8 to 12 ounces a day. It was extremely offensive. On Nov. 9th he began to inhale oxygen in a small stream continuously for six hours a day out of one of the bags invented by Dr. George Stoker for the purpose, which I borrowed to make trial of the method. He continued to do so until Dec. 2nd, when I stopped this treatment, and for purposes of comparison began the inhalation of creosote vapour in the chamber which we have built for the purpose at the hospital. On the 16th I began the oxygen again and continued it until Feb. 2nd, when he was discharged.

The points to which I wish to draw attention are: (1) the amount; (2) the odour of the sputum; and (3) the general feeling of the patient under the treatment. From Oct. 20th to Nov. 8th the sputum was from 8 to 12 ounces in amount and extremely fœtid. The oxygen was begun on Nov. 9th. The following are my notes: "Nov. 13th. Sputum for the last three days has averaged only 4 ounces. It is much less fœtid. Cough is less and he has much better nights. 17th. Sputum averages 3 ounces. 24th. Sputum now 2½ ounces. Dec. 1st. Sputum averages 2 ounces, has only a mawkish smell, no fœtor. Oxygen discontinued. 2nd. Creosote inhalations begun. 8th. Sputum averages 4 ounces. 15th. Sputum averages 5 ounces; is more offensive than when he was taking oxygen. Coughs more. 16th. Oxygen begun again. 21st. Sputum averages 1½ ounces, less offensive. 28th. Sputum averages 1 ounce, hardly smells at all," and so it remained. There was no question about his own opinion or that of the sister of the ward. He liked the oxygen far better than the creosote; he felt better, and ate better while under its influence. I may

add that in my opinion he undoubtedly did better and looked better.

I do not think there is any more troublesome complaint to treat than this of offensive sputum with bronchiectasis. It appeared to me to be just the sort of case in which oxygen inhalations should be tried. They are much less unpleasant than creosote, and they appear to me to have been in this case much more effective. I should strongly recommend it for similar cases. I will add that as this man was a mouth-breather I stuck a small vulcanite tube, like the mouthpiece of a pipe, into the end of the tube leading from the bag of oxygen, and put it in his mouth. It was no trouble to him.

Wimpole-street, W.

A NOTE ON A CASE OF CYSTIC OVARY.

BY GRENVILLE P. JONES, M.R.C.S. ENG., L.R.C.P. LOND.

ON March 13th, 1908, I was called to see an unmarried woman, aged 23 years, who for the last three years had been complaining of a persistent dull aching pain in the left iliac region. Though better at times she was never quite free from the pain. During the past 12 months she had been practically confined to the house, spending most of the time in bed. Catamenia were very irregular and painful, and she often went three or four months without a period. She had been treated medically for some time and her symptoms were looked upon as neurotic.

On examination of the abdomen it was found to be much distended with flatus, but nothing else abnormal could be made out. She was ordered a mixture containing small doses of magnesium sulphate for two weeks, which relieved the distension, but the pain remained as bad as ever. I then asked my partner, Dr. G. M. Sharpe, to administer an anæsthetic so that a complete investigation into the symptoms could be made. I found, on a bimanual examination, some thickening in the left ovarian region but no more definite condition. As, however, she had been complaining for such a long time and was now unable to leave the house through the pain, I decided to open the abdomen. This was done through the sheath of the left rectus muscle, when we found the left ovary to be entirely cystic. In size it was only slightly larger than the opposite ovary. The left Fallopian tube was congested and unhealthy-looking, and there were several old adhesions between it and the intestines. I removed both the tube and ovary and closed the wound in the ordinary way. The patient made an uneventful recovery and is now walking about, not having had any return of the pain since the operation.

This case shows how essential it is to examine these patients, with apparently neurotic symptoms, under an anæsthetic.

Pateley Bridge, Yorks.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION.

Experiments and Experiences—Pharmacological and Clinical—with Heart Tonics.—Action of Digestive Ferments upon Each Other.

A MEETING of this section was held on April 6th, Dr. T. E. BURTON BROWN, the President, being in the chair.

Dr. J. GORDON SHARP read a paper entitled "Experiments and Experiences—Pharmacological and Clinical—with Heart Tonics." 1. Digitalis. Dr. Sharp said he had examined many specimens of tincture purchased in the open market, and of these several had been found to be inert, having no action on the frog's heart. With the aid of a pharmacist he had endeavoured to find out some of the causes which led to inert preparations being sold: (1) leaves other than those of digitalis might be collected, and unless the batches were examined by someone knowing the characteristics of the leaf error might occur; and (2) a more important cause was improper drying, because if the leaves were allowed to steam the ferment contained in the plant would break up the glucosides. The action on the frog's heart when the tincture was injected into the dorsal lymph sac was next discussed, and Dr. Sharp said that digitalis differed in its action from squill and strophanthus. It did not so certainly stop the heart as strophanthus, but when it did so the ventricle might be found still while the venous sinus and auricles were beating. He emphasised the importance of having preparations of digitalis, squill, and strophanthus pharmacologically standardised. In discussing the action of the drug in man Dr. Sharp said almost the only way of judging of the effects of digitalis or other heart tonic was an indirect one—namely, whether the drug under consideration would remove a cardiac dropsy after rest in bed had failed. To credit any substance as a heart tonic because it appeared to tone up the pulse, lessen the area of heart dulness, or relieve palpitation was evidence of an uncertain character, because there was room for so much divergence of opinion on these points. Dr. Sharp said digitalis acted much more quickly than was generally supposed. He considered the tincture as the handiest preparation; when it was rejected the drug could be given in pill form. It acted most quickly when it was given in doses as large as could be tolerated. Digitalis was the only real heart tonic. 2. Squill preparations were not so often found to be inert as digitalis or strophanthus. They acted energetically on the frog's heart and in poisonous doses appeared to wear out the heart by its energetic action. However, in actual practice these acted up to a certain point and then failed entirely. Their chief use was as an adjunct to digitalis. 3. Strophanthus preparations were often found to be inert in the past, but within the last three years so much attention had been directed to the importance of having standardised preparations that this difficulty would disappear. The drug acted with certainty in the frog's heart and in poisonous doses appeared to stop it in all its anatomical parts simultaneously. In man its diuretic action seemed to be direct—namely, on the secretory tubules of the kidney—as opposed to the indirect diuretic action of digitalis (and in part so in squill) through the circulation. Although it did not act in cardiac dropsy like digitalis, it might by its stimulant action on the kidneys produce a certain amount of diuresis. Given in 20 to 30 minim doses of the tincture it had in many cases of cardiac dropsy a general analgesic action without any real effect on the dropsy. It gave comfort to the patient.

Dr. WILLIAM BAIN read a paper on the Action of Digestive Ferments upon Each Other. He referred to numerous experiments which he had made and described some of these in detail, pointing out the practical application of those results in treatment.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Exhibition of Cases and Specimens.—Henoch's Purpura.

A MEETING of this section was held on March 26th, Dr. E. CAUTLEY being in the chair.

Mr. P. MACLEOD YEARSLEY showed a case of a Peculiar Form of Word-deafness successfully treated by the Oral Method. The child could not appreciate heard speech, which she merely repeated aloud, but when she was able to see the speaker such seen speech (lip reading) was immediately answered rationally. The word-deafness apparently prevented the higher centre being effective, but she had now learnt to understand by lip reading. After practice with great effort heard phrases were now understood and answered without the motor response of repeating the question. Mr. Yearsley thought that it was difficult to explain the case on any hypothesis other than that of weakness of the auditory centres.

Dr. H. C. C. MANN exhibited a specimen of a Tumour of the Left Suprarenal obtained from the body of a child aged two years. The growth was 7 inches long by 4½ inches broad. The kidney lay at its lower pole. The growth extended through the diaphragm, invading the pericardium and left lung. The left pleural cavity contained nearly a pint of blood-stained fluid and showed small secondary growths. The cervical glands were sarcomatous. Secondary deposits were also found in the orbital plates, in the right parietal bone, and in the sternum. The child came to hospital with a history of six weeks' weakness and anæmia. A leucocyte count showed 15,000 white cells; hæmoglobin and red cells, 60 per cent. The tumour, which was apparently splenic

during life, enlarged rapidly under observation. It moved well with respiration. Death occurred two months later. The tumour was a round-cell sarcoma.

Dr. CAUTLEY showed: 1. The brain from a case of Cerebral Diplegic Spasticity, which had been shown to the section on Feb. 20th, 1909. The whole of the frontal and parietal regions was converted into a bilateral cystic form, bounded mesially by a wall containing a moderate amount of brain substance. According to the history, the child had been healthy till the age of seven weeks and then had an illness which could be accounted for as encephalitis or meningitis. The post-mortem appearance made it more probable that the condition was congenital, dependent on developmental error in the prosencephalon. 2. A specimen of Congenital Heart Disease, showing transposition of the aorta and pulmonary artery. The right ventricle was the larger and gave off a normal aorta, from which the great vessels arose by a common origin. The left ventricle gave off the pulmonary artery which was stenosed on account of two of its valves being adherent. There was a small opening in the interventricular septum and the foramen ovale was patent. The ductus arteriosus was normal. The child lived till 11 months, showing moderate cyanosis and clubbing. The heart was enlarged to the right of the sternum. There was a systolic pulmonary murmur and a systolic murmur heard at the apex and behind.—Dr. F. S. LANGMEAD said that there was a specimen in the Museum of Great Ormond-street Hospital which closely resembled Dr. Cautley's first case. It showed some narrowing of the small cerebral vessels.—Dr. G. CARPENTER said he had neither seen nor read of a case like Dr. Cautley's, but had seen a locular cystic condition which Dr. A. Ernest Jones reported was, in his opinion, syphilitic. During life the child had been spastic, with head retraction, and showed atrophic patches in its choroid.

Dr. A. J. JEX-BLAKE showed a female child, aged seven years, with Congenital Heart Disease. She had a good colour and weighed 28 pounds. Over the pulmonary area a continuous murmur could be heard, loudest during systole. It could also be heard over the whole chest back and front.—Dr. T. R. C. WHIPHAM thought there were one or two small glands to be felt in the neck. If the murmur was not due to glands he would agree that it was caused by a patent ductus arteriosus.—Dr. G. DE B. TURTLE asked whether the murmur varied in intensity from time to time. That was so when it was due to enlarged glands.—Dr. CAUTLEY thought that it was a purely systolic murmur and was inclined to ascribe it to some pulmonary stenosis and patency of the interventricular septum than to any other defect, because there was so much hypertrophy. The child had not grown well, which he thought meant a bad prognosis.—Dr. JEX-BLAKE replied that the murmur had not been noticed to grow louder or softer at different times.

Dr. CARPENTER showed a case of Congenital Malformation of the Heart, showing a patent ductus arteriosus with bicuspid aortic valves. The child died at the age of three months. During life there was a systolic murmur, best heard over the third left space, just inside the nipple line, conducted towards the left clavicle. The left side of the heart was the larger. The right ventricle was dwarfed. The foramen ovale was closed.

Dr. WHIPHAM gave a pathological report upon the specimen of Congenital Cystic Disease of the Kidneys showed at the section on Jan. 22nd, 1909. The sections showed small cysts with a great increase of connective tissue. The tubules were mostly dilated but many were contracted. The glomeruli were somewhat contracted but Bowman's capsules were dilated. The arteries were thickened. The pancreas showed some fibrosis and thickening of its vessels. The bile-ducts of the liver were dilated and convoluted. The spleen showed an excess of connective tissue.—Dr. F. PARKES WEBER thought that the spaces in the portal fissures might be blind spaces and not dilated bile vessels. In that case the liver was an example of cystic liver.

Dr. WHIPHAM showed transparencies and photographs of a case of Bullous Purpura following Impetigo in a boy, aged four years. There was no history of hæmophilia or of syphilis in the patient or his family. The fluid from the bullæ contained degenerated blood corpuscles, but no growth of organisms could be obtained by cultivation. From the impetigo lesions a mixed growth of staphylococcus albus, citreus and streptococcus was obtained. The patient was given boric baths, and the bullæ either were punctured or burst spontaneously, leaving deep sloughing ulcers. Under treatment with hydrogen peroxide, chinosol baths, and balsam of Peru dressings the ulcers cleaned and the condition was now cured.—Dr. G. PERNET referred to a paper he had read on Bullous Impetigo Contagiosa in Children who had Pediculosis. The purpuric condition was more unusual. He thought, in the present case, that the purpura was of streptococcal origin.

Dr. WHIPHAM showed a case of Transposition of the Viscera in a girl, aged eight years. There was a mitral systolic murmur at the heart's apex. The child had had chorea twice.—Dr. CAUTLEY thought that such cases were not so uncommon as one was led to believe in books. He believed that prognosis of life was just as good as if the heart were not transposed.—Dr. F. J. POYNTON and Dr. F. LANGMEAD thought that if the heart was on the right side of the body there was greater liability to endocarditis.—Dr. PARKES WEBER asked whether proposers for life assurance should be rated up if the viscera were transposed?—Dr. WHIPHAM thought not.

Mr. O. L. ADDISON showed (1) a case of Ankylosis of both Hip Joints ascribed to Scarlet Fever, and (2) a Case of Syphilitic Osteoperiostitis.—Dr. CAUTLEY asked what treatment had been adopted in the second case, and Dr. E. I. SPRIGGS asked whether the tissues or fluids had been examined for the spirochæta.—Mr. ADDISON replied that after operation the general conditions had improved under mercury and iodide. There was still a sinus over the tibia. Spirochætæ had not been looked for.

Dr. POYNTON showed a case of Congenital Symmetrical Swellings on both Heels in a girl. His view was that they were lipomata.—Dr. PERNET agreed.

Dr. CARPENTER showed a microscopical specimen of the liver from a case of Icterus Neonatorum in a child, aged 19 days. She became jaundiced on the second day. The navel was healthy. The stools were green. There was a systolic murmur over the left pulmonary area and in the left axilla. Post mortem, the liver was not enlarged, but its section was a deep mahogany colour with large visible veins. As far as the bile ducts could be traced they were empty and not obstructed. Microscopically, the liver cells were crammed with bile granules of an olive-grey colour. The fine bile capillaries were filled with inspissated bile in irregularly shaped masses, and showed a moniliform outline.—Dr. SPRIGGS said that it was not necessary for there to be gross blockage for the production of obstructive jaundice, not only in the condition of toluylenediamine poisoning, but in acute yellow atrophy and phosphorus poisoning. It was probable that the jaundice occurred because of the catarrh of the small bile-ducts. That might also account for liver cells containing particles of pigment.—Dr. POYNTON referred to two cases which he brought before the section two years ago, in which the children got well. He thought that in cases of prolonged jaundice it was a mistake to vaccinate the child. He did not think that such cases were common.—Dr. PARKES WEBER referred to cases in which several children of the same parents had had jaundice, some of them having died.

Dr. J. PORTER PARKINSON read a paper upon three cases of Henoch's Purpura. Case 1 was a boy, aged eight years, who suffered from pain in the legs and abdomen and a purpuric rash over most of the body and limbs. The spleen could be felt. The urine contained albumin and occasionally a trace of blood and casts. The abdomen was tender in the epigastric and right iliac regions, and there was occasional vomiting. The child was treated with two injections of horse serum without any improvement, but recovered and was discharged with the urine still albuminous. Case 2 was a boy, aged six years, suffering from abdominal pain and vomiting. There were purpuric spots all over the extensor aspects of the limbs. The abdomen was not tender. The urine contained albumin and occasionally blood. In hospital he was suddenly attacked with abdominal pain and the abdomen became tender in the left lumbar region. The pain continued on and off for nearly two months, occurring in crises every two days. Blood was found in the stools during most of this time. Later the face became puffy, especially the lips and eyelids, but the child began slowly to improve. The treatment was at first calcium chloride and later three injections of horse serum. Two fresh groups of purpuric spots appeared while the child was taking calcium. The third case, under the care of Dr. Charles Bolton, was a boy, aged six years, who came into hospital with severe pain and passing blood in the stools with a measly non-purpuric

rash and coryza. On the next day he vomited and passed blood and mucus by the rectum. The abdomen becoming distended, it was thought that intussusception might be present and the abdomen was opened but none found. There were flecks of lymph in the peritoneum with some appearances of general peritonitis. The boy died on the following day. At the necropsy there was general peritonitis and on the small intestine were 13 hæmorrhagic extravasations of about the size of peas and projecting on both outer and inner surfaces of the intestine. About a foot from the iliac valve there was a collection of much larger hæmorrhages. The small intestine was distended with gas, and the large intestine as far as the splenic fissure, where for about six inches it was quite dark from diffuse hæmorrhage, thickened, and looked almost gangrenous. The diagnosis lay between measles and Henoch's purpura, the suspicion of intussusception not being verified. Dr. Parkinson thought that it was a case of purpura, but the absence of blood and albumin in the urine was unusual. The case supported a suggestion of Mr. Hugh Lett made in the Reports of the Society for the Study of Disease in Children that it is advisable not to operate for intussusception in a case of Henoch's purpura unless an abdominal tumour can be felt.—Mr. HUGH LETT said that the presence or absence of intussusception in Henoch's purpura was very important. He had reported a case in which intussusception had developed during the illness and was reduced by operation. 17 days later another intussusception occurred and the child died. He thought that the crucial feature to be relied upon was the presence of a sausage-shaped tumour and that there should be no operation where a tumour was not felt. He had operated upon 28 cases of intussusception, in all of which he felt a tumour either from the abdomen or per rectum. In two or three of them he could not feel it without an anæsthetic. Surgical operation in Henoch's purpura was a very serious matter and in some cases the patient had died of hæmorrhage from the wound. If he saw another case of undoubted intussusception with purpura he would be inclined to try injection before operation.—Dr. LANGMEAD said that a tumour might be present simulating intussusception but due to extravasation of blood, and Dr. SPRIGGS referred to another case showing this condition.—Dr. CAUTLEY thought that the term "Henoch's purpura" should be dropped, as the disease was simply purpura hæmorrhagica with abdominal symptoms, and Dr. PERNET agreed.

Mr. J. P. LOCKHART MUMMERY showed a case of Hyperplastic Tuberculosis of the Rectum in a boy, aged 10 years. There was no pain or straining but the bowels were loose, being opened as many as 20 times a day. There was no vomiting or wasting and the appetite was good. Large masses could be felt projecting in the rectum from all sides, irregular in surface and shape. With the sigmoidoscope several ulcers about a third of an inch in diameter were seen and had the appearance of tuberculous ulcerations. The whole of the mucosa of the rectum was red and swollen. The ulceration quickly cleared up as the result of daily irrigation with weak antiseptics.

Dr. CARPENTER showed a case of Scurvy in a boy, aged 16 months. He had been reared on cow's milk and barley-water for the first three months, and afterwards had been given bread-and-milk, &c. He was admitted to hospital with a history of two falls, and was found to have a bruise over the right eye and a hæmatoma of the scalp with a cranial fracture. After 12 days he was discharged as cured and continued in good health for six weeks when he was readmitted with a swelling in the left arm without any history of injury. The swelling extended from the shoulder on to the forearm. There were also marks of old hæmorrhages on the backs of both feet. The skiagram showed no fracture. He had improved very much on a suitable diet.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

Beri-beri.

A MEETING of this society was held on April 16th, Sir PATRICK MANSON, the President, being in the chair.

Dr. W. LEONARD BRADDON (Selangor, Federated Malay States) communicated a paper on Beri-beri, which was read by Dr. T. S. KERR. The writer said that in British Malaya the European civil population shared with the native races all the possible factors of causation of disease; there was between them the difference only of food; the natives were rice eaters, the Europeans were not; the Europeans, with rare exception, never got beri-beri, the natives did. The Sikhs, Pathans, and Punjabis, of whom there were some 10,000 in the Straits Settlements and native States, whose customary diet was wheat flour, exhibited as a community an immunity from beri-beri as complete as that of Europeans; of 4237 hospital patients of that class, less than 1 per cent. were diagnosed as beri-beri, some of whom, as paupers, had been fed on rice. In Japan, where the natives (rice eaters) were attacked, the numerous colony of Europeans and Americans of every class, and even the Ainhos (non-rice eaters) escaped. If beri-beri, wherever occurring, was due to rice, then it was urged its incidence on rice eaters ought to be everywhere the same instead of as at present showing such violent contrasts, one rice-eating community being unaffected, another being exterminated. That assumed rice to be always the same, but that it certainly was not, and the facts which followed were evidence that among rice eaters beri-beri attacked only eaters of certain sorts of rice. For the Tamil the rice was prepared from grain which was boiled before the husk was removed (cured rice). The Chinese, on the other hand, never used cured rice. Both races were susceptible to beri-beri. Always and everywhere the uncured rice-eating community (the Chinese) suffered from beri-beri. The cured rice eaters (the Tamils) with equal invariability escaped. There was abundant evidence to show that among rice eaters those who consumed fresh village rice—e.g., the agricultural Malay, the Dyak—were exempt from beri-beri, so that among rice eaters beri-beri attacked only those who ate certain sorts; cured and fresh rice were innocuous. Cured rice, which did not produce beri-beri in its consumers, consisted of the whole grain from which only the husk had been removed, so that rice itself *qua* rice was not poisonous, and the factor in uncured rice which entailed beri-beri must therefore be some quality added to or lacking in the original grain. In uncured rice the fat and proteid content was reduced; moreover, the seed divested of its protective envelope readily decayed and was more easily attacked by various agents of decomposition. It was always more or less stale. Numerous observations proved that lack of fat was certainly not a cause of beri-beri; and although there seemed more evidence in the proteid starvation view propounded by Takaki, a survey of the published dietaries of the communities among whom beri-beri was severe furnished evidence that proteid if deficient in them was not so to such an extent that it could have been productive of disease. The presence of a poison in uncured rice explained all the phenomena of beri-beri; the disease being due to a poison present in variable proportion in the rice consumed, the effects will be proportionate to the quantity of noxious rice eaten, and the length of time during which it was eaten. In epidemics in which the diet had been improved, where it was claimed that the disease had been thereby checked, there had been, simultaneously with the addition of other articles, a reduction in the amount of rice. It was plain, therefore, that the toxic quality of the uncured rice which produced beri-beri was an added effect; either the grain itself became altered in its nature (poisonous proteins) or it became the seat of growth of agents (e.g., ferments, bacteria, fungi) which produced a poison of their own. In both cured and fresh rice the grain had been boiled or cooked almost at the same time as it was husked, uncured rices being boiled and eaten only long after they were husked. The difference between rice which was toxic and rice which was non-toxic was therefore a question of boiling early or boiling late. A time element was imported—implying change, a process of some kind, a growth in uncured rice for which time was required but which simple boiling of the grain immediately it was stripped of its envelope entirely prevented. There could be little doubt that the noxa was a living thing, but whether an enzyme or an epiphyte, who could say? From the observation that horses fed on unhusked rice became affected with a disease resembling beri-beri it was conjectured that the active agent was some epiphyte existing in or upon the envelope of the rice and able to invade it saprophytically under appropriate conditions when husked. It was specific to rice, as the use of no other cereal had been proved to entail beri-beri. The evidence, it was claimed, proved conclusively what from want of facts Van Dieren was not able to more than indicate as probable, and there had

been demonstrated the fact that the change which rendered such rice poisonous might be avoided if, when it was necessary to store it unhusked, it were boiled before husking.

Mr. A. R. WELLINGTON (medical officer in Sarawak) communicated some notes on Beri-beri Outbreaks among Chinese, Dyaks, Malays, Javanese, and Tamils in the gaols and hospitals and in the mining and agricultural districts and communities of Sarawak. Some of the facts, he noted, would seem to indicate that beri-beri was infectious, others that it was due to food intoxication; in one case he considered that its disappearance was undoubtedly due to change of diet. He was unable to prove that bed bugs were carriers of beri-beri, but since the bed bugs in the general hospital at Kuching were got rid of no fresh cases had arisen there. As regards lice, he had no evidence to offer except in so far that beri-beri broke out in gaols and institutions where the inmates were subject to inspection and presumably therefore less lousy than the general population. With regard to rice, he asserted that beri-beri was unknown amongst the Dyaks, the natives of the interior, who husked their own "padi," yet those people if they came to an endemic area were just as apt to suffer as the Chinese. He instanced the case of a gaol in which the prisoners were fed on native newly husked rice and among whom no case of beri-beri had ever occurred; in Baram, too, they claimed to have ousted the disease by feeding people on fresh rice, not necessarily native rice, but Siam rice, which looked fresh. On the other hand, among the coolies at Brooketon coal mines beri-beri was at one time rampant, whereas now there was none, yet no change had been made in the rice used. Instances were cited by Mr. Wellington as cases of apparent infection, and as showing the difficulties of tracing beri-beri to rice intoxication he quoted many more instances. He then quoted possible instances of place infection or of infection conveyed from one individual to another, and gave details of an undoubted instance of the disappearance of beri-beri from Kuching jail following the use of freshly husked rice. Mr. Wellington stated that in 50 per cent. of his cases he had noticed a period of invasion averaging three days, during which there was fever, sometimes so slight as to be overlooked, in other cases fairly severe and akin to influenza and often diagnosed as such, but followed on the third or fourth day by numbness and weakness and confirmed as beri-beri by the subsequent history.

Dr. W. CARNEGIE BROWN said that in Italian ships in which the crews lived on rice and in which the sanitary conditions were bad beri-beri was unknown, but in Norwegian vessels in which the dietary was good, with but little rice, and the sanitary conditions were good beri-beri was very common. Beri-beri was a disease of association.

Brevet Lieutenant-Colonel W. B. LEISHMAN considered that perhaps rice would be found to play an important part in the causation of beri-beri.

Replying to Dr. J. L. MAXWELL, Dr. CARNEGIE BROWN stated that the husk was removed from the rice at the mill, but the rice was stored at the mill sometimes for five or six months before being husked.

Mr. JAMES CANTLIE said that it looked as if the long storage of the rice might have something to do with the question.

Dr. G. C. LOW observed that the cases of beri-beri in ships were identical with cases of beri-beri in the East.

Dr. T. S. KERR said that since orders had been given that the inmates of public institutions in the Straits Settlements should be fed on cured rice not one case of beri-beri had occurred in those institutions.

Dr. J. P. BRADLEY said that in the prison at Seychelles beri-beri was observed to break out when the prison was crowded.

The PRESIDENT mentioned that Tamils living on cured rice in Rangoon contracted beri-beri. Until the germ or the toxin of beri-beri was discovered, and until direct experiments could be carried out and the results watched, it would not be possible to decide the question.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Atmocausis.—Rotunda Hospital Reports.

A MEETING of this section was held on April 2nd, Mr. E. H. TWEEDY, the President, being in the chair.

Dr. R. D. PUREFOY showed a small Uterus removed for recurrent hæmorrhage from a patient, aged 50 years, the mother of some children. She had been curetted in the first instance and some thickened membrane had been removed. Some improvement was made, but the hæmorrhage recurred. Atmocausis was applied, but after another violent recurrence the uterus was removed. The specimen showed enormously thickened uterine walls and almost complete absence of endometrium.—A discussion followed on the value of atmocausis in the treatment of similar conditions, in which Dr. A. N. HOLMES, Dr. H. JELLETT, Sir W. J. SMYLY, Professor A. J. SMITH, and the PRESIDENT took part.

Mr. J. S. SHEILL exhibited an improved Material for Ligaturing the Umbilical Cord.

Professor SMITH opened an adjourned discussion on the Obstetrical and Gynæcological Reports of the Rotunda Hospital. He said that there was little difference between the report and those of 12 years ago. Recent reports seemed to have become stereotyped. It was a most striking fact that the work done in the extern and intern departments was practically the same as regards results. Such a fact reflected great credit on all concerned and was an immense change from olden times, when it was safer to be confined outside a maternity hospital than inside it. He thought the morbidity was high in operative cases in which the greatest possible care was taken.—Sir WILLIAM SMYLY thought it was a very good thing that the report had assumed a stereotyped form, as it enabled them to make comparisons and to note advances such as the report showed. In 1886 there were four deaths out of 15 abdominal sections; in the present report there was one out of 10 times that number: that was a remarkable advance. He thought the report was the very best he had seen, both as to the matter it contained and the way in which it was brought out.—Dr. F. W. KIDD, after commenting on certain cases in the report, said that there were 235 abortions in the extern department and only 40 in the intern, although the total numbers attended were practically the same in each department. He thought that was due to women staying at home in preference to going to the institution. He observed that there were 3½ times more adherent placentas in the extern than in the intern department. Probably undue efforts were made to expel the placenta, with the result that the uterus was made to contract and incarcerate the placenta, and the student may have rushed to the conclusion that it was adherent. He thought the morbidity table served to emphasise the danger of the introduction of the hand into the cavity of the uterus.—Mr. SHEILL said that under the headings of "pernicious vomiting" and "eclampsia" it was mentioned in the report that the urine of the patients contained albumin, but there was no mention of the output of urea or ammonia, which was considered to be of importance in diagnosing the severity of a case. He made a practice of estimating the output of urea on the appearance of the first sign or symptom of toxæmia and found it of great value. Also in pernicious vomiting, if the percentage of ammonia reached eight or ten of the total nitrogen excreted, then it was an indication for emptying the uterus.—After Dr. PUREFOY, Dr. HOLMES, Dr. T. NEILL, and Mr. TREVOR N. SMITH had discussed different aspects of the report, Dr. JELLETT said there were very few reports of any hospital of the kind that could produce the statistics shown in the tables of eclampsia and Wertheim's operation. They stood out as important proofs of what could be done by careful treatment and successful operation. He thought there was nothing so important as keeping reports stereotyped for purposes of comparison, though not excluding fresh matter. He observed the omission of some tables which were formerly included, such as those on prolapse of the cord, post-partum hæmorrhage, and the sex of twins.—The MASTER OF THE ROTUNDA, in reply, said he made it his object to take up one or two fresh subjects in each report, and he had dealt with the treatment of eclampsia the previous year. His mortality was 11 per cent., as compared with 35 per cent. 20 years ago. He had not dealt with pubiotomy, as they had not had a case during the year. He dealt with it fully last year, when they had five cases. He preferred Cæsarean section as an easier and safer operation if he got the case in time. His indication for performing pubiotomy arose when he was sure he could not get a living child save by enlarging the pelvis. Ether was used in the case of Cæsarean section that died. It was an extraordinary uterus, thin-walled and flabby, yet without hæmorrhage. The placenta was firmly adherent. Professor Smith was

surprised that they should have a greater morbidity after the application of forceps than in normal delivery. They, however, maintained that the less they interfered the smaller the morbidity. In spite of all precautions they could not get as small a rate of morbidity as when they left the patient alone, which proved that they had not reached the perfection of obstetrical technique. They had estimated the free urea and urea in its form of ammonia, but it had not led them to any conclusion. Others were working on the subject and they would be glad to learn from them. Without doubt the less experienced a man was the more cases of adherent placenta he would meet. He had not seen a table of placenta prævia that did not show a big infantile mortality. The child was probably dead before they began to turn. It was usually a premature child and he was afraid they would always have a high mortality, no matter what treatment they adopted. In the central case they went through the placenta. The foot was brought through the rent; the child did not bleed to death, as the placenta hæmorrhage was stopped by the leg that was pulled through the hole.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A clinical meeting of this society was held on April 2nd, Dr. Seymour Taylor being in the chair.—The following cases were shown:—Mr. J. G. Pardoe: A case of Complete Extensor Paralysis of the Arm after excision of the elbow following an accident. The scar was dissected out and the musculo-spiral nerve was found to have been divided just above its division. Anastomosis by end-to-end suture was performed.—Dr. Fredk. Palmer: (1) Two cases of Tabes Dorsalis with unusual symptoms and (2) a case of Habit Spasm in which irregular spasmodic movements of the face, neck, head, and trunk muscles were m[illegible]dly present.—Mr. N. Bishop Harman: 1. A case of [illegible]ile Cataract with Infantilism in a man, aged 50 years, with the physique of a fat boy and the penis of a boy two years of age. He had a well-formed scrotum but no testes. 2. A case of Chronic Gouty Conjunctivitis in a man, aged 62 years.—Mr. E. Archibald Smith: A girl, aged 18 years, with a Painless Tumour of the Tongue of ten years' duration, probably a lymphangioma.—Mr. W. McAdam Eccles: A case of Charcot's Ankle in a man, aged 29 years, and presenting symptoms of tabes dorsalis. A skiagram showed much destruction of the bony surfaces of the tibia and astragalus.—Mr. Cecil H. Leaf: A case of Excision of the Rectum for Malignant Disease by the Abdomino-perineal Method.—Dr. Seymour Taylor: (1) A case of Purpura; and (2) a Heart from a patient who developed a loud bruit after a strain and thought to have a torn aortic cusp. An inflammatory deposit was found post mortem on the aortic wall just above the valve.—Dr. J. F. Halls Dally (for Dr. P. S. Abraham): (1) A case of Dermatitis Herpetiformis in a woman, aged 39 years; (2) a case of Bullous Erythema in a boy, aged 10 years; (3) a case of Serpiginous Syphilide in a woman, aged 63 years; (4) a case of Trichophyton Endothrix on the scalp of a man, aged 20 years—a contradiction to the statement of Dr. Sabouraud of Paris that the disease is not found in adults.—Dr. E. C. Sparrow (for Dr. Saunders): (1) A case of Myelocythæmia; and (2) a case of Bazin's Disease.

Reviews and Notices of Books.

Modern Clinical Medicine. Diseases of the Nervous System. Edited by ARCHIBALD CHURCH, M.D., Professor of Nervous and Mental Diseases and Medical Jurisprudence, Northwestern University Medical Department, Chicago, Illinois. An Authorised Translation from "Die Deutsche Klinik," under the general editorial supervision of JULIUS L. SALINGER, M.D. With 195 illustrations in the text and five coloured plates. London: Sidney Appleton. 1908. Pp. 1205. Price 28*s.* net.

A GREAT deal of pioneer work in reference to diseases of the nervous system has been done by German and Austrian neurologists, and it is of special interest to find a text-book on this subject in which the individual articles are written by men who have contributed greatly to the elucidation of the conditions they describe and whose names are for the most part of world-wide reputation. The book before us represents the teaching of the German-speaking authorities, but at the same time full justice is done to the work of British and French neurologists, and the editor may be congratulated in bringing so valuable a work of reference within the general reach of English and American practitioners of medicine. The various articles are thorough in their presentation of the clinical manifestations of the individual diseases considered in them, and critical and suggestive in their discussion of the pathological problems presented by them, while sections devoted to treatment are in each case included. The accounts are, in general, exhaustive and as complete as possible in a work of reference. Some are, indeed, practically original monographs on special conditions.

In a work of such magnitude it is not practicable within the limits of a review to refer categorically to each article, but some are of such special importance as to demand attention. The first five articles are more or less introductory and deal with the anatomy of the central nervous system, the histology with special reference to the neuron theory, methods of examination, and general neurological diagnosis. The account of lumbar puncture is contributed by Professor H. Quincke of Kiel, and affords a complete examination of the use of this procedure in diagnosis and treatment. Detailed instructions are given as to the method of employing it. The operation of slitting the dura mater is described, and Professor Quincke is of opinion that it merits further trial as he has found it of value in chronic and subacute cases of serous exudation with permanent increase of pressure.

Professor C. Wernicke of Breslau contributes an interesting study of the Symptom-Complex of Aphasia. Much of the work of this distinguished investigator in advancing our knowledge of the intricate subject of aphasia has become classical, and his name is attached to a part of the cortex of the brain which is involved in the processes of speech. It is therefore of special interest to study this article, in which the various forms of aphasia that have been differentiated are clearly described. The gradual evolution of our knowledge from the time of the brilliant work of Broca is traced, and the methods of investigation of cases are described; and while the author is most modest as to his own contributions to the subject, full justice is done to the work of Bastian, Meynert, Déjerine, and von Monakow. It is a great pleasure to read an article so critical and suggestive in character.

Professor F. Schultze of Bonn describes the characters of neoplasms of the spinal cord and its membranes, and devotes special attention to their topical diagnosis. He reproduces the diagrams of Edinger, Seiffer, and Head, showing the segmental distribution of the various nerve roots. Tumours of the cauda equina are also described and an illustrative case is given in detail. An exhaustive account follows of myelitis by Professor E. von Leyden and Dr. P. Lazarus of Berlin. Interesting tables of spinal localisation of the motor and reflex functions are included. The much discussed question of the reflexes in complete transverse myelitis above the lumbar region is considered and the various views offered by different authorities are given. Professor W. Erb of Heidelberg deals with tabes dorsalis in a long article, in which the many problems connected with that disease are carefully considered. The discussion of its relation to antecedent syphilis is based on Professor Erb's own observations. In a study of 1100 cases of tabes among the better classes he found that 89·45 per cent. had been infected previously with venereal disease. He reviews the evidence in detail, and it is difficult to resist his conclusion that in the overwhelming majority of cases tabes is the direct sequel of syphilis. His description of the pathological anatomy is

also most thorough, and he points out that it is impossible to give a satisfactory account of the pathology at present, since although research has taught us the localisation of the process and how to explain it, it has not revealed its actual starting point or its nature. The article includes a special discussion of the treatment of tabes and is a most valuable account of the disease.

A useful and careful description of syringomyelia is given by Professor F. Schultze. The pathology and pathological anatomy are discussed in some detail. The same authority contributes the article on progressive muscular atrophy, in which the myopathies or muscular dystrophies are also considered, and the various forms which have been separated are regarded as varieties of the same affection. In regard to the spinal forms of progressive muscular atrophy, three varieties are described—viz., the infantile hereditary or Werding-Hoffmann form, the ordinary Aran Duchenne type, and amyotrophic lateral sclerosis or the Charcot form. The article also includes a description of the progressive neurotic muscular atrophy of Hoffmann. The account of neuritis and polyneuritis by Dr. R. Cassirer of Berlin contains a useful classification of the causes. The various forms of mononeuritis and polyneuritis are carefully differentiated and some good coloured plates are given of the pathological changes occurring in these conditions. Dr. L. Edinger of Frankfort-on-the-Main discusses the etiology of migraine and the various forms of headache. Professor Erb describes the characters of paralysis agitans, and while accepting the view that it is the result of a fine nutritive molecular disturbance principally localised in the motor apparatus, confesses that the origin of the disease is still mysterious. Dr. L. v. Frankl-Hochwart of Vienna contributes articles on athetosis, tetany of adults, and Thomsen's disease. He gives a highly interesting account of his own observations on the epidemico-endemic form of occupation tetany and the association of psychoses with it. Professor Th. Ziehen of Berlin, in an interesting and illuminating study of hysteria, gives some valuable and suggestive instructions in regard to treatment. His analysis and description of the protean symptoms of this condition are also helpful and clear. A valuable study of traumatic neuroses is given by Dr. P. Schuster of Berlin, and the various occupation neuroses are described by Dr. Cassirer.

The book as a whole is one which should be of real value to the practitioner as a work of reference in regard to diseases of the nervous system and their treatment.

The Third Report of the Wellcome Research Laboratories at the Gordon Memorial College, Khartoum. By ANDREW BALFOUR, M.D., B.Sc. Edin., F.R.C.P. Edin., D.P.H. Camb., Director. With 28 coloured plates, 51 reproductions of black and white drawings, 263 reproductions of photographs, and 19 maps and plans. London: Published by Baillière, Tindall, and Cox for the Department of Education, Soudan Government, Khartoum. 1908. Pp. 477. Price 21*s.* net.

THE third biennial report of the Wellcome Research Laboratories, Khartoum, continues the record of the valuable and interesting work described in previous reports. But the material which has become available and the scope of the investigations are year by year increasing greatly. The first report was contained in some 87 pages of text, with 61 plates, drawings, and plans; while that just issued comprises 477 pages, with no fewer than 361 illustrations of one or another kind. This is not all, for Dr. Balfour has issued a supplement of 251 pages of additional matter, to which we direct notice separately below. It is not surprising that the material to be reported upon has increased, since the functions of the Research Laboratories as formally set out are extremely far-reaching: they include the promotion of technical education; the study of tropical diseases by the most modern methods, particularly those maladies which afflict man and beast in the Soudan; the rendering of assistance to medical officers in civil and military hospitals, by laboratory investigations, in the diagnosis of disease; the giving of aid in medico-legal inquiries; the analysis of water and foodstuffs; the study of the disorders and pests which attack food and textile-producing plant life; and the undertaking of the assaying of agricultural, mineral, and other substances of importance in the industrial development of the Soudan. Dr. Balfour has made a new departure by including in the present report papers written by Soudan officials, members, for example, of the Egyptian Army Medical and Veterinary Services, and others who are not actually on the staff of the Research Laboratories.

The director of the laboratories is also medical officer of health of Khartoum, and in this capacity he has introduced into the report, under the title of "Sanitary Notes," a very complete description of the sanitary circumstances of that city, giving also a comparison between its present actual condition and that which obtained before the British occupation, illustrated by photographs and plans. Details are given of the water-supply, the conservancy methods, disposal of sewage, the state of slaughter-houses and markets, the milk-supply, and other matters which have to be supervised by the health department. Dr. Balfour points out incidentally the difficulties he meets with in enforcing health regulations, even with the help of the Egyptian policeman, who is, however, we learn, as far as sanitary matters are concerned, "a monument of stupidity," and who often aids and abets offenders "through the kindliness of his heart and the thickness of his head." Incorporated with these Sanitary Notes is an instructive paper on Dwelling-houses in the Tropics, with Special Reference to the Soudan, by Mr. W. H. McLean, lecturer on civil engineering in the Gordon College and municipal engineer for Khartoum. Dr. Balfour has to admit that with the increase of administrative work less time is left to him for the conduct of laboratory investigations. But notwithstanding this he has found time to contribute to the present report scientific articles on Trypanosomiasis in the Anglo-Egyptian Soudan; Hæmogregarine of the Jerboa, &c.; Piroplasmosis in the Soudan; Spirochætosis of Soudanese Fowls; and on Sleeping Sickness in the Bahr-el-Ghazal, to which are appended by Lieutenant R. G. Archibald, R.A.M.C., the pathologist and assistant bacteriologist of the laboratories, additional notes on that disease in Uganda. Other contributions are made on the subject of Kala-Azar in the Anglo-Egyptian Soudan, by Captain S. Lyle Cummins, R.A.M.C., of the Egyptian Medical Service, and by Bimbashi L. Bousfield, R.A.M.C., Egyptian Medical Corps, on Observations of Kala-Azar in Kassala Province. It deserves mention that the cases of kala-azar which came under observation were mostly traced to districts bordering on Abyssinia, where, as in the Soudan, many villages and towns are infested by bed-bugs which are suspected to be the agents in diffusing the disease.

It is with great regret that Dr. Balfour chronicles the death from kala-azar, contracted during his short period of service, o Dr. A. MacTier Pirrie, who was engaged in anthropometrical studies among some of the least known tribes in the wilder parts of the Soudan. His notes and the specimens and drawings which he had collected were submitted to Dr. David Waterston, lecturer on anatomy in the University of Edinburgh, who has been good enough to arrange them and to prepare them for publication under the title of "Report upon the Physical Characters of Some of the Nilotic Negroid Tribes," profusely illustrated by reproductions of photographs and drawings. Other notes on ethnographical

specimens collected by the late Dr. Pirrie have been arranged for publication by Mr. D. J. Vallance, curator to the Royal Scottish Museum, Edinburgh.

A most interesting report is contributed by Dr. C. M. Wenyon, protozoologist to the London School of Tropical Medicine, who acted as travelling pathologist and protozoologist during 1907–08, and who made some valuable investigations on board the floating laboratory which was moved up and down the Nile and its tributaries as required. This novel laboratory was suggested by Dr. Balfour, and Mr. H. S. Wellcome generously supplied the equipment. Opportunities were taken by this means to investigate locally certain diseases, including dysentery and guinea worm, and among other things trypanosomiasis in certain animals, including Nile fishes. This report is illustrated by coloured plates. Dr. Wenyon also collected a number of specimens of parasitic worms which were handed on his return to this country to Dr. R. T. Leiper, helminthologist to the London School of Tropical Medicine, who prepared an account of them for publication in the report of the Research Laboratories. Dr. Wenyon, in addition, collected a number of specimens of reptiles at the different stations in the Upper Nile and Bahr-el-Ghazal provinces, as well as a number of poisonous snakes. These collections were examined and reported upon by Dr. Franz Werner, assistant in the First Zoological Institute of the University of Vienna. A most useful report on economic entomology is contributed by Mr. Harold H. King, member of the Association of Economic Biologists, in which he deals with animals injurious to man and animals; those injurious to farm and garden crops; those injurious to trees and shrubs; and lastly, those injurious to stored goods and timber. He has also something to say on fungoid pests and the like. His paper is profusely illustrated by coloured plates, and we can quite understand how it came about that from his conspicuous knowledge of entomology Mr. King was named by the Soudanese "the father of flies." "New Mosquitoes from the Soudan, and List and Synoptic Table of all Soudanese Species," illustrated by many drawings, form the subject of a contribution by Fred. V. Theobald, vice-principal and zoologist at the South-Eastern Agricultural College, Wye. A historical paper on the healing art as practised by the dervishes in the Soudan during the rule of the Madhi and Khalifa appears from the pen of El Bimbashi Hassan Effendi Zeki, of the Soudan Medical Department, medical officer to the Gordon Memorial College. Dr. Zeki, it may be mentioned, occupied the position of medical adviser to the Khalifa in the troublous days preceding the reconquest of the Soudan by the British and Egyptian troops. The native methods of treatment of diseases in Kassala and neighbourhood are discussed by Captain Bousfield, and this paper is supplemented by valuable additional notes contributed by Sir Rudolf Slatin. Medical practices and superstitions amongst the people of Khordofan, their treatment of disease, and their chief drugs, instruments, and appliances in common use are commented upon by Captain R. G. Anderson, R.A.M.C., Egyptian Medical Corps. This paper is illustrated by drawings and photographs and is extremely interesting. The volume concludes with a report of the chemical section of the Research Laboratories by Dr. William Beam, F.I.C., the chief chemist, who was assisted in his important work by Mr. J. A. Godson and by Mr. E. S. Edie, B.Sc., Carnegie research scholar in chemistry 1907–08, who carried out a special research on the chemistry and bacteriology of Soudan gum-arabic.

In the preparation of his third report Dr. Balfour has had to encounter unusual difficulties, the most serious of which was a disastrous fire in May, 1908. In this conflagration a large portion of the Research Laboratories at Khartoum were destroyed along with many specimens and preparations, books, papers, and records which had taken years to collect. Much of the equipment of the laboratories was destroyed or damaged. Thanks in a great measure to the prompt and generous help given by Mr. Wellcome the laboratories were quickly refitted and the work was soon carried on again as before.

Supplement to the Third Report of the Wellcome Research Laboratories, Khartoum: a Review of Some of the More Recent Advances in Tropical Medicine. By A. BALFOUR, M.D. Edin., &c., and R. G. ARCHIBALD, M.B. Edin., R.A.M.C. London: Published by Baillière, Tindall, and Cox for the Department of Education, Soudan Government. 1908. Pp. 251. Price 10*s.* 6*d.* net.

THIS supplement to the biennial report is modestly termed by Dr. Balfour a "review." It is intended to help medical and veterinary officers stationed in the Soudan, especially those in out-stations, by keeping them in touch with current literature. It is also intended to serve as a guide to new books and papers dealing with recent discoveries and advances in our knowledge of tropical and veterinary medicine, bacteriology, and hygiene, more particularly where these have a bearing on the medical, sanitary, and veterinary work in the Anglo-Egyptian Soudan. The subjects dealt with in this "Review," some 89 in number, are arranged alphabetically so that reference to them is easy. They treat mostly of tropical diseases, but there are special articles on various subjects, such as air, blood, climate, clothing, dust, disinfection, filters, flies, food, ice, milk, mosquitoes, sewage, water, and vaccination. The "Review," though intended primarily for the use of officials in the Soudan, cannot fail to be of great service to many workers in other tropical countries. It will also be of value to those who are studying tropical medicine and preparing for examination, particularly as it is provided with a serviceable detailed index which will greatly assist the reader who seeks for information on any branch of a given subject. We congratulate Dr. Balfour and Lieutenant Archibald on the production of this excellent piece of useful work.

Naval Warfare: Its Historical Development from the Age of the Great Geographical Discoveries to the Present Time. By Baron CURT VON MALTZAHN, Vice-Admiral (retired). Translated from the German by JOHN COMBE MILLER. London: Longmans, Green, and Co. 1908. Pp. 152. Price 2*s.* net.

THIS book consists of a series of lectures on the Historical Development of Naval Warfare, delivered at Hamburg by Baron Curt von Maltzahn, a Vice-Admiral of the German Imperial Navy. They were afterwards published in book form for the enlightenment of the German nation, and they urge the supreme need of maritime knowledge and development; and for this very reason the book has a great general significance and is full of suggestion to all Britons, to whom the sea and all that pertains to it are of such vital importance.

Admiral von Maltzahn, in discussing his subject, does not allude to any matters of medical or sanitary interest from the strictly professional point of view. He defines war as "a conflict of interests which is solved in blood," and just as war emerges out of the conditions of peace so it also tends back towards peace again, its aim being to compel peace on the victor's own conditions. He regrets that naval matters before the formation of the German Empire had not their proper significance to the German people and were not rightly understood because the exploits of their own armies, which liberated the fatherland from the yoke of the foreigner, loomed larger in their eyes. Naval warfare, according to his view, has hitherto been waged on

two different methods; in one case the sea is seized by military occupation and is used as a "thoroughfare of advance" to capture the enemy's country; and secondly, the sea is left open and descents are made on the enemy's sea-borne trade. Besides these two methods there are others which partake of the nature of both—viz., doing damage along the enemy's coasts and, if possible, invasions by land forces. Colonies and over-sea trade may also be made to suffer. This sums up what is apparently the writer's view of German strategy and German tactics (an insight of which is of national interest to us at present), and it is based on a pithy historical review of naval wars (chiefly British victories being quoted) from 1500 to the late Russo-Japanese war. In the events of 1805 prior to the battle of Trafalgar it is pointed out suggestively that the British blockade in front of the French harbours was aimed at keeping the different sections of the French fleet apart and that this object was achieved. Attention is also drawn to the fact that the "English with their practicality and strong dislike of theorising" held out in modern times longest against naval manœuvres in peace time, until it was realised how closely such manœuvres could be made to imitate real warfare, when "the rich resources and the practical sense of seamanship possessed by the English enabled them to redeem the time they had lost, and at the present moment England in this regard stands once again in the foremost place." Contrast is made between the *matériel* and *personnel* of the British and German fleets. "If a short time ago it could be said of England that the strength of her naval equipment consisted rather in the quantity and quality of her ships than in any systematic preparedness for war from the strategical and tactical standpoints, we [Germany], on the contrary, have always been better off in the matter of technical than of material preparation." As illustrating the importance of the command of the sea rendering the work of land forces useless when their line of sea communication is cut, Nelson's victory at Aboukir Bay is quoted, explaining that Napoleon's army in Egypt was cut off from Europe, and showing how a similar catastrophe would have befallen the Japanese army in Manchuria had Rozhdestvensky's fleet triumphed and defeated the Japanese navy. The weak points in the armour of Germany are hinted at, one being "blockade of German ports," for "not simply the coasts but the whole country would suffer ..... it would knock at the inland office of the merchant, it would hammer at the gates of the factories in the great industrial centres in the heart of the country, and it would rap on the doors of the houses of our working men." ..... "This is so because the continental states are more vulnerable than they were, since they have more to fear from naval warfare which is the chief weapon in England's hands."

We may be considered to have given a book of no especial medical interest undue prominence when so much excellent medical literature calls for attention, but the subject is of the utmost importance to every Briton, for the safety of our island home depends on our navy. The book is well translated and most readable; and to the translator, Mr. J. C. Miller, a debt of gratitude is due for making it available.

LIBRARY TABLE.

The Care and Nursing of the Insane. By PERCY J. BAILY, M.B., C.M. Edin. London: The Scientific Press, Limited. 1908. Pp. 270. Price 2*s.* 6*d.* net.—This little book opens with a clear, succinct, and sufficient description of the anatomy and physiology of the human body. As a rule in this class of work anatomical details are over elaborated, but in the one before us we feel that the author has realised during his experience as lecturer that it is impossible to expect the average member of the average class to absorb more than the broadest anatomical facts. In the latter part of the book there are wholly admirable and minute directions as to the toilet of the sick, their feeding and treatment, and it is concluded with an excellent account of the most common symptoms, while most wisely no unnecessary attempt is made to enable the nurse to form his or her own diagnosis. We can with confidence recommend the book to nurses and to lecturers to nurses.

Golden Rules of Anæsthesia. By R. J. PROBYN-WILLIAMS, M.D. Durh. Golden Rule Series, No. XIV. Bristol: John Wright and Sons. Third edition, revised. 1908.—The appearance of a third edition of this little book is proof enough of its suitability to the ends which it desires to meet. It contains in fact in condensed language and small compass most of the leading facts and principles which a student should incorporate into his knowledge before he regards himself as familiar with the subject of anæsthetics. Naturally, in a tiny work like this there are omissions, and we should have liked to see some mention of so important, if still debateable, a question as delayed chloroform poisoning. Moreover, the student who uses a work of this kind must of course realise that the writer takes for granted in his readers a full knowledge of the physiology of the subject. In the paragraphs dealing with chloroform there should, we think, be introduced some account of regulating inhalers, and in those discussing ether an account of the simplest and in some ways the best of all ways of giving ether, viz., by the open method, ought to be included.

JOURNALS AND MAGAZINES.

Proceedings of the Royal Society of Medicine. Vol. II., No. 5. London: Longmans, Green, and Co.—The outstanding feature of this liberal number is the continued report of the discussion on ulcerative colitis on Feb. 10th, to which some 70 pages are devoted. They include a summary of statistics of the disease from the records of nine London hospitals and are a valuable contribution to its literature. The report includes remarks by Sir Patrick Manson, Dr. T. Claye Shaw, Dr. Sidney P. Phillips, Mr. W. G. Spencer, Dr. Norman Dalton, Mr. J. P. Lockhart Mummery, Dr. Bertrand Dawson, Dr. J. P. Zum Busch, Dr. H. D. McCulloch, and Sir William H. Allchin. In the Surgical Section Dr. J. Kay Jamieson and Mr. J. F. Dobson publish a painstaking research into the lymphatics of the colon, approaching their subject from both the anatomical and pathological standpoints, and Mr. R. J. Godlee writes on the Torus Palatinus, a median bony ridge in the hard palate occurring in certain skulls. The report of the Anæsthetics Section is occupied with the latter part of the discussion on the proposed Anæsthetics Bill, which has received much attention in our columns. The Clinical, Dermatological, and Laryngological Sections report a series of cases too numerous to mention, amongst which notes upon elephantiasis treated by lymphangioplasty, by Mr. W. S. Handley, and upon a case of anæsthetic leprosy, by Dr. H. P. Hawkins, are of especial interest. The Neurological Section contains an account of the remarkable results obtained by the alcohol injection treatment of neuralgia and spasm contributed by Dr. Wilfred Harris. To the Obstetrical and Gynæcological Section Dr. Frederic J. McCann contributes a paper on Primary Sarcoma of the Fallopian Tubes, a rare form of tumour. In the Odontological Section is an instructive communication from Mr. K. W. Goadby on the general results of the special rules in force in match factories, in which he concludes that "a marked decrease has taken place in the amount of industrial phosphorus poisoning concomitantly with an improvement in the dental condition of the workers in the various

factories." In the Otological Section Mr. Sydney R. Scott contributes a well-illustrated description of some sections of the human cochlea through the organ of Corti, showing a beaded nerve fibril traversing the tunnel of Corti, and cell fibrillæ projecting from the hair-cells. The Therapeutical and Pharmacological Section concludes the number, and under this heading the constant swinging of the medical pendulum is to be felt in Dr. E. I. Spriggs's paper on the treatment of gastric ulcer by immediate feeding, in which he compares the Lenhartz dietary to the treatment by saline and nutrient enemata followed by a graduated milk diet somewhat to the advantage of the former method.

Le Larynx, l'Oreille, et le Nez. Jan.-Feb., 1909. Paris: Maloine. Price 75 centimes.—This number contains an article of much technical value on direct laryngoscopy which will be read with interest by all who wish to get the views of other observers upon the latest method of dealing with diseased and other abnormal conditions of the upper air passages; beyond this there is nothing novel in this issue.

Reports and Analytical Records
FROM
THE LANCET LABORATORY.

PLASMON.

(INTERNATIONAL PLASMON, LIMITED, 66A, FARRINGDON-STREET, LONDON, E.C.)

WE reported upon plasmon in these columns nearly nine years ago, when we set before our readers the ordinary results of a chemical analysis. Our attention has recently been drawn to the fact that plasmon, since it is pure milk protein, contains phosphorus associated with the proteins—that is to say, in an organic form. It is well known that ash-free casein contains phosphorus as apparently part and parcel of its molecule, the quantity present being estimated as 0·85 per cent. Casein free from salts would not yield a phosphatic residue on ignition, but when associated with mineral salts there is little doubt that part of the organic phosphorus forms phosphates which are found in the ash on igniting the substance. The importance of phosphorus in organic association has lately been emphasised, and preparations like lecithin and the glycero-phosphates have been introduced into medicine as of value in neurasthenia and nervous disorders generally. There is reason for believing that organic phosphorus compounds of an allied nature exist in plasmon. According to our analysis the total phosphorus calculated as phosphoric acid in plasmon acting on it with nitric acid is 2·88 per cent., the amount found in the ash gives 2·24 per cent., while the amount extracted from plasmon by weak acid was 1·42 per cent. The organic phosphorus, therefore, lies between 2·88 and 1·42 per cent.—that is to say, to about 1·46 per cent., which is the amount found in terms of phosphoric acid in pure milk proteid. Milk proteid is, in fact, distinguished from other proteids by containing phosphorus, and it is satisfactory to observe that this element is not eliminated in plasmon.

COFFEE FREED FROM CAFFEINE.

(THE LIFEBELT COFFEE CO., 71, HASTCHEAP, LONDON, E.C.)

Caffeine is generally looked upon as one of the most important constituents of coffee, since, like alcohol, it is a stimulant, but differs from that substance inasmuch as its effects are exerted upon the central nervous system more than upon the heart. Thus coffee drinking is well known to remove sense of fatigue and in some cases produces sleeplessness. Coffee, therefore, has a definite physiological action, but in certain cases this action may be a harmful one. If it is proved that caffeine is responsible for the harmful effects of coffee the caffeine-freed article should be an introduction of some importance. We have carefully examined the sample submitted to us and found that while it preserved the fragrance and aroma of good coffee yet it contained only 0·16 per cent. of caffeine. Ordinary coffee contains, on an average, after roasting, about 1·0 per cent. of alkaloid, so that the above reduction amounts to about 84 per cent. of the total alkaloid. It is claimed that patients suffering from nervous affections or heart affections, who exhibit, in fact, an idiosyncrasy to ordinary coffee, not only take this coffee without harm but with benefit. The subject is an interesting one.

LACTIC TABLETS.

(ARTHUR H. COX AND CO., BRIGHTON.)

The statement that these tablets contain a culture of vigorous strains of the lactic acid bacillus was borne out in some experiments we made with them on milk. One tablet, after being crushed to powder, was placed in a little warm milk and the fixed acidity from time to time determined. After 24 hours the original acidity had doubled, and after 36 hours it had nearly trebled. The tablets are therefore useful for the anti-putrefactive treatment of the digestive intestinal tract.

DIGALEN.

THE HOFFMANN LA ROCHE CHEMICAL WORKS, LIMITED, 7 AND 8, IDOL-LANE, LONDON, E.C.)

This is a clear, colourless, sterile solution containing the active principle of digitalis folia. It is claimed that it has a certainty of action, admits of exact dosage, avoids gastric troubles, produces no cumulative effect, while its administration gains a prompt physiological response. These claims are supported by a number of excerpts from German medical literature published in a brochure issued by the above firm. The preparation is due to Professor Cloetta, who has succeeded, he states, in isolating from the leaves an amorphous digitoxin which is soluble in water. Each cubic centimetre of the solution corresponds to 0·3 milligramme of the amorphous digitoxin. The solution keeps well, being preserved with glycerin. It is further claimed that the hypodermic injection of digalen causes no irritation.

COGNAC BRANDY (FLOQUET FILS).

(FRANCIS GREEN AND CO., OCEAN HOUSE, 24 AND 25, GREAT TOWER-STREET, LONDON, E.C.)

We believe this brandy to be correctly described, both in regard to its origin and to its age. It presents the attractive characteristics of an old (21 years) liqueur Cognac brandy. As will be seen from the analysis it contains a relatively rich proportion of ethers. The analysis was as follows, the results being expressed in parts per 100,000 parts of alcohol present: volatile acidity, reckoned as acetic acid, 72; aldehydes, 40; furfural, 2; ethers, reckoned as ethyl acetate, 134; and higher alcohols, 136. These figures coincide very closely with those obtained with genuine old Cognac brandy. The alcohol amounted to 49·81 per cent. by volume, the extractives to 0·95 per cent., and the mineral matter to 0·02 per cent. This brandy has a smooth, refined flavour and is suitable for medical requirements.

BOTTLED FRUITS.

(THE BROUGHTON NURSERIES, WICKFORD, ESSEX.)

Three preparations were examined—namely, apples, blackberries, and tomatoes—and in no instance was any metallic contamination discovered nor were any objectionable preservatives found. The preparations are, in fact, sterilised and subsequently placed *in vacuo* in the bottle, which is provided with a lid forced on a rubber ring by atmospheric pressure. The fruits were in a quite sound condition and were satisfactory to the taste.

BURMESE AND CAROLINA RICE.

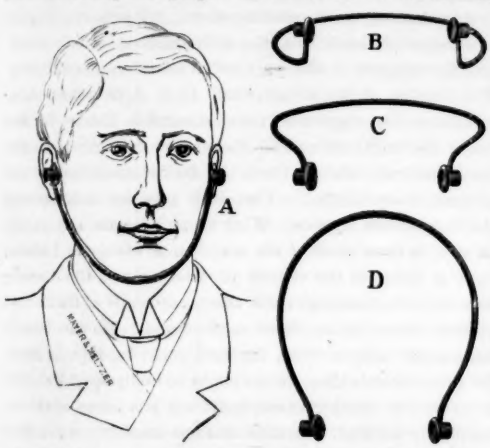
A correspondent in Rangoon recently asked us if we would submit to analysis a sample of Burmese rice, as prepared and

eaten by the natives, with the view of deciding whether it showed a greater nutritious value than the Carolina rice usually sold by grocers in London. Our correspondent states that by the process which rice undergoes before it is sold in England it is deprived of part of its valuable constituents, the nitrogenous envelope, he adds, being polished off. According to the results of our analysis we can lend little support to this contention, for the following were the results:—Burmese rice: moisture, 15·70 per cent.; protein, 9·96 per cent.; starch, 74·04 per cent.; and mineral matter, 0·30 per cent. Carolina rice: moisture, 15·0 per cent.; protein, 10·14 per cent.; and starch, 74·86 per cent. The only appreciable difference between these results is that the Burmese sample contained a distinct quantity of mineral salts, while the Carolina sample yielded practically nothing on ignition. The starch and protein in both samples were practically identical in amount.

New Inventions.

A TRAGUS TRUSS OR EXTERNAL EAR PRESS.

THE external spring ear press or ear truss has been devised by me to exclude or modify moderate noise sounds. It possesses the great advantages that it does not disturb the ear, is clean to wear, and is easily put on and off. Great or bone convection sounds cannot be stopped by such a pressure instrument; indeed, for partly deaf people and using bone conduction or audiphone apparatus it would improve the effect through intercepting extraneous sounds. The spring ear press therefore should be used chiefly as an indoor instrument, and in conjunction with double or closed windows or any other quietening aids. The range of relief in this way from many disturbing sounds will be considerable. If used out of doors it will still account for at least the shutting off of distant noises, but not for all close noises. It will also be useful for producing sleep, especially when slight noises distract susceptible people and cause them to suffer in so



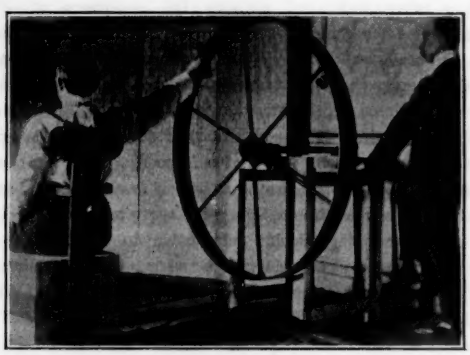
exhausting a way. It sometimes stops the whirring noise of arterial high tension, in its turn partly a product of noise strain through afferent and tension results. Such noise becomes intolerable on laying the ear to the pillow or placing the head in any resting and dependent position. To wear the spring ear press the bow, which is rubber covered, fits under the chin in the case of the standard pattern A; behind the neck and below the ear in pattern B; or behind the head and above the ear in pattern C; and above the head in pattern D; the pads press on the tragus over each external meatus of the ears, and by pressure the spring and pads close the ear-conducting by-ways. The standard or chin shape, A, can be made in three ordinary sizes. The other three shapes, behind and above the head, may be preferred by some as being more easily worn or less noticeable; but these latter ones should be measured or fitted from ear to ear.

The instruments have been made, according to my designs, by Messrs. Mayer and Meltzer, Great Portland-street, London, W.

H. ELLIOT-BLAKE, M.R.C.S. Eng.,
Bognor. L.R.C.P. Lond., L.S.A.

APPARATUS FOR STRETCHING THE LIGAMENTS OF THE SHOULDER JOINTS.

THE accompanying illustration represents an apparatus for the use of golfers and cricketers in the gymnasium of the Bournemouth Hydropathic for stretching the ligaments of the shoulder joints. It may interest surgeons who are in search of an apparatus that can certainly increase the range of movements in these joints when they have been limited by injury or disease. The apparatus consists of: 1. A wheel, four feet in diameter, fixed on a suitable stand which can be made to revolve in a vertical plane. The movements may be produced by hand, pedal, or otherwise. To one spoke a sliding clutch is attached with which is connected a stirrup-shaped hand-piece. 2. A chair, consisting of a seat capable of moving up and down by means of a vertical screw-support placed centrally. The back of the chair consists of a T-shaped structure, the vertical limb of which fits into brackets attached to the seat, and can be raised or lowered to suit the length of the back of the athlete using



The apparatus at work.

the apparatus. A belt is fixed to the stem for encircling the waist of the sitter. To each end of the cross-piece a belt is fixed for encircling the shoulders. The sitter, when securely strapped to the chair, has the movements of his spinal column limited to a minimum, and the shoulder-blades are practically immobile when the shoulder-straps are securely fastened. The sitter, with his mesial plane parallel to that of the wheel and a little further than an arm's length from it, grasps the stirrup-shaped handle, which is at first attached near the centre of the wheel. On bringing the wheel into motion by the operator's hand or the pedal, the hand of the sitter is circumducted through a small circle at first. The circle of circumduction is gradually increased by shifting the clutch towards the rim. The seat rotates on a platform, so that, without unfastening the sitter, his other arm can be subjected to similar exercise.

The Bournemouth Hydropathic Company will, we understand, supply the apparatus at almost net cost to any purely charitable institution. And, as will be gathered by the above description, it might be very useful in many places, but we must append a word of warning as to its use. Great mechanical force can be exercised by it under the various manœuvres, and we feel strongly that it should only be employed in cases where its need is certified by a medical man, and more, where the range of movements can be absolutely arranged by the surgeon and the results carefully watched. Otherwise the consequences might easily be very serious. It is especially important that it should not be employed in cases of stiffness of the shoulder resulting from tuberculosis, for in these the affection is often merely latent and such forced movements as might be provided by the machine would almost certainly rekindle the disease.

THE LANCET.

LONDON: SATURDAY, APRIL 24, 1909.

Treatment of Tuberculosis at Sea.

WE have received from Dr. A. N. J. HANEDOES of Vaassen, Holland, an interesting and suggestive communication dealing with the subject of the treatment of tuberculosis at sea. The plan of sending patients suffering from pulmonary tuberculosis on a sea voyage is no new one and some years ago was adopted more frequently than it is at the present time. The reason for this is simple; theoretically the effect of sea air should be most favourable on sufferers from tuberculosis, but hitherto the conditions of life encountered on board ship have outweighed the benefits that might be obtained if the cabin accommodation, diet, and other arrangements could be especially adapted for invalids. Dr. HANEDOES rightly draws attention to the characteristics of ocean air. It is absolutely free from dust and bacteria. The ozone it contains is probably also of therapeutic value, although, as far as we are aware, accurate and detailed observations on this point are wanting. Further—a matter of particular importance to those afflicted with pulmonary tuberculosis—a warm, equable climate with a sufficient amount of humidity can be assured. The physiological effect of sea air is also seen in its sedative action on the nervous system, and the aseptic condition of the air acts beneficially both on the air passages and the system at large. The salt that is present in larger proportion than in inland air appears to render the expectoration less viscid without injuring the mucous lining of the air passages. Dr. HANEDOES also maintains that owing to its greater density the physiological effects of sea air may be compared to those obtained in a pneumatic cabinet: the respiration is slackened and rendered deeper. Full inspiration is certainly of benefit in pulmonary diseases, and he further states that the "unconscious and continually deepened respirations unfold and strengthen the lungs much more than is obtainable on shore by gymnastics and walking." In expressing this opinion, we believe that Dr. HANEDOES only states a portion of the truth. The deep respiration brought about by "gymnastics and walking" is only one of the beneficial effects produced by these measures. Probably the chief result of active exercise is to bring about auto-inoculation, by means of which the protective forces of the body are brought into action, and owing to the increase of the opsonins the phagocytic power of the white corpuscles is increased. To this matter, however, we shall again refer. Other influences of sea air mentioned by Dr. HANEDOES are the general tonic action which it exerts and the increase of appetite which generally follows. "A delicious feeling of corporal and mental animation," he says, is experienced, and the desire for more food is naturally of advantage to tuberculous subjects.

Such being undoubtedly the beneficial effects of sea air, what are the drawbacks to sending patients on sea voyages? The first that suggests itself is the want of suitable accommodation on the ordinary ocean-going vessels. Although in recent years the cabins on board the large steamers have been greatly improved, nevertheless, on an ordinary voyage, there must be occasions, sometimes considerably prolonged, during which patients will be confined to their cabins, such as the continuance of inclement weather. Further, on long voyages, great variations of temperature are experienced and the dietary is of necessity not always in accordance with the needs of invalids, although every care that is possible is usually taken in this respect in large steamers intended for passenger traffic. Finally, but not least, sea-sickness is a condition that must be seriously considered in advising a tuberculous invalid to take a long sea voyage. It is obvious, then, that such objections as the above may well make the physician hesitate before recommending a patient to adopt this therapeutic measure. Dr. HANEDOES, however, makes proposals which, although not being altogether novel, yet are an advance on other plans which have been hitherto suggested. He recommends the formation of a floating sanatorium in the shape of a large sailing vessel, provided with an auxiliary screw, which would be useful in entering or leaving harbours, or in the case of calms. The ship would be especially fitted for the accommodation of invalids. Such a plan has been made before, but Dr. HANEDOES'S special point is the nature of the cruise. He rightly insists that the ship would have to sail according to a fixed arrangement, whereby season, temperature, degree of moisture of the air, qualities of the harbours to be visited, and the calmness of the sea must be all taken into account. The duration of the voyage would have to be about three months, and he suggests as the most suitable district for the cruise the neighbourhood of Madeira in the course of the north-east trade winds. There the desired conditions would be most closely fulfilled. The sea is calm for months and the temperature equable. What could be more enjoyable, he asks, to those fond of the sea than a voyage to Lisbon, then a cruise in the vicinity of Madeira and the Canary Islands, with occasional visits ashore, and calls at Cadiz and perhaps Havre on the homeward voyage? No far-distant destination being in view, the land could be kept in sight for a considerable time, shelter might be easily sought should unfavourable weather ensue, and fresh provisions could be constantly provided. Weariness and the constant confinement on board ship inseparable from a long ocean voyage would be avoided, whilst the maximum therapeutical effects could be produced.

The important question next arises, for what class of patients would this treatment be most applicable? For certain cases of tuberculosis of joints, when active exercise can only be indulged in to a limited extent, we believe that a voyage of the nature suggested would prove most beneficial. For young subjects with tuberculous glands, when sufficient active exercise could be obtained in the limited space available on the deck of a ship with occasional runs ashore, such a course might also be well

adopted. With pulmonary tuberculosis, however, and when the patient is able to take a good deal of exercise or to perform manual labour, the question is not so simple. The results of auto-inoculation produced by "graduated labour" are very encouraging, and on a ship "labour" of the required kind would be difficult to arrange and control. For individuals in the early stage of the disease, we think that treatment on land under suitable supervision is certainly preferable. The best results of active exercise and labour are, however, only obtainable in persons of fairly good physique. There are numerous patients, who, from various causes, do not respond well to graduated labour; auto-inoculation cannot always be satisfactorily regulated. In others bronchial catarrh is an impedient to modern sanatorium treatment. For such cases a voyage of the nature suggested by Dr. HANEDOES might well be tried, and we believe that he has performed good service by putting forward his scheme, which we should like to see brought to a practical issue, provided that all the requirements mentioned above can be procured.

The Great Importance of Small Things.

OUR excellent contemporary *Punch*—and in our opinion the philosopher of Fleet-street has never been better worth reading and marking than now—has lately and genially called us to account as alarmists, and we are allowed to guess that the reason is that we have endeavoured from time to time to give publicity to fragments of knowledge of various kinds, for most of which, as for truths of every other description, it is probable that some useful application may one day be found. We are quite accustomed to the accusation that it is our grim pleasure to make the public flesh creep, but we hope that our thoughtful readers credit us with a worthier motive than delight in popular scares. The history of science teems with illustrations showing that no truth is either insignificant or incapable of becoming a starting point for further advances, and in our own day the importance of the infinitely little is constantly forced more and more upon our attention. When the great discovery was first promulgated that intermittent and yellow fevers were communicated to man by mosquito bites, scores of sciolists, globe-trotters, and others, communicated to newspapers their several varieties of ignorance. "Common Sense," who did not know the difference between typhoid fever and "yellow jack," had lived in countries where there were no "mosquitoes" and where "fever" was abundant and deadly; while "An Old Traveller," who did not know the difference between an anopheles and a stegomyia or between either of them and a culex, had been where "mosquitoes" were abundant but where "fever" was unknown. A discovery calculated to save millions of lives was looked upon as a fitting subject for the indignant remonstrances of the ignorant, chiefly, as far as we can see, because a gnat is such a common little thing that to suggest it as the medium for the dissemination of an appalling amount of deaths and of physical misery and incompetence partakes of the nature of a medical scare. An employé of a railway and dock company by calling the attention of the sanitary authorities recently to the occurrence on premises under his eye of certain dead rats may have saved us from a little epidemic of plague—we say "little" because our preventive system is so good that tropical diseases never get any firm footing within our gates. If this work had been epitomised under a paragraph headed "Fleas and Pestilence" we can imagine "Paterfamilias" summing up the story in a letter to the press as foolishly alarmist.

In another column a correspondent deals in an amusing manner with the questions propounded through the pen of "Paterfamilias" by *Punch* to us, and shows that under some of them, at any rate, ridiculous as they are, serious medical issues might well be discussed. We should perhaps be thought to be dealing too seriously with the matter if we followed up the different points on the lines wittily suggested by "F.R.C.S.," but we wish it to be understood that our aim is to call attention to real dangers which the ignorant or the frivolous are apt to overlook, and which in many cases merit more consideration than they commonly receive. The questions in *Punch* were, for example, suggested by a paragraph in THE LANCET on the poisonous nature of honeysuckle, and all who know the propensity of children to pluck and eat berries of tempting appearance, and the many instances of serious or fatal poisoning to which this propensity has led, will feel it to be desirable that publicity should be given to the fact that a plant with a name suggestive of sweetness may become a source of real danger. We wish it to be understood that we are by no means dealers in popular scares, and that the dangers to which we from time to time direct the attention of our readers are real ones. They may sometimes be small, and if so we do not attempt to exaggerate them. Knowledge of the channels through which disease finds access to the human body is daily increasing in the medical profession, and conditions which a few years ago would have been thought of only as annoying (bugs in hired lodgings, for example) are now properly regarded as possible sources of serious danger. Of the cases of indisposition to which a busy family practitioner is daily called, there are too few in which he can determine, with any approach to scientific certainty, the immediate cause of the ailment for which he is asked to provide a cure, and this because the patient and his family cannot tell him a succinct story. It is true that the patient will usually have no doubt upon the point, and will say at once how and when he "took cold," or what it was that "disagreed with him." His beliefs on the subject, as every medical man knows, are usually mere delusions, which it is useless to spend time in combating. We are coming more and more to regard a high standard of public health as a matter of national concern, and to realise that upon its maintenance may seriously depend the fitness of the coming generation to "speak with the enemy in the gate." In these circumstances it does not become us to neglect dangers because they may appear to be trivial, and while we recognise that the reproof of *Punch* was as kindly as possible, we must continue with dull seriousness to protest that we write in earnest and not with irresponsible gaiety.

The Resuscitation of the Apparently Drowned.

THE Hunterian lectures delivered every year at the Royal College of Surgeons of England are always of great value, for they represent the latest opinion on matters of current surgical importance. Of the many recent Hunterian lectures we do not remember any of more interest than those delivered during the past month by Professor ARTHUR KEITH on the mechanism underlying the various methods of artificial respiration.[1] From time immemorial various artifices have been employed to resuscitate those who have been immersed in water for a short period and have been apparently drowned. In superstitious ages the natural spontaneous wish to revive a drowned man was restrained by the tradition that a man rescued from drowning was destined to bring ill-luck to his rescuer, and though this superstition survives, we believe, in some parts of the country it has little influence in preventing the onlookers of a drowning accident from doing their utmost to revive the unfortunate victim. Zeal, however, generally outruns knowledge, and the dim recollections of methods of resuscitation are employed with much misdirected energy and probably with harmful results.

Dr. KEITH took as his starting point the year 1774, when the Royal Humane Society was founded by Dr. WILLIAM HAWES, and he reviewed all the devices for reviving the apparently drowned which have been in use or recommended from that day to this. It is a disquieting fact to learn that practically all the methods advised by the society in its early years have been discarded and condemned since; for the thought cannot fail to arise that our most cherished modern methods may in their turn be rejected by those that come after us. Stimulants to the nose and skin, bleeding, emetics, and the fumigation of the large intestine with tobacco smoke, all these were looked upon as valuable methods of reviving the drowned, but now they are unknown. Warmth and friction of the skin still survive and are of definite value, and especially useful is warmth. The only method of artificial respiration that was then known was direct inflation from the operator's mouth, and though this was discarded later by the society many recoveries were ascribed to its use, and it is probably by no means useless. As these lectures were given under the ægis of JOHN HUNTER it is interesting to note that at Dr. HAWES'S request JOHN HUNTER supplied suggestions for the restoration of the apparently drowned, wherein he gave the first place to artificial respiration carried out by means of a double chambered bellows which he invented for the purpose, one chamber being used for filling and the other for emptying the lungs. He proved the efficacy of the bellows on dogs, and at the same time he suggested that oxygen, which had been discovered by PRIESTLY only two years before, might be more potent than air. Dr. KEITH did not have time to consider fully the whole question of the resuscitation of the drowned, so he dealt mainly with the question of the consideration of the best method of introducing air into the lungs. In cases of drowning it is now acknowledged that water does enter the lungs, though until quite recently this fact was denied. In one case a dog in drowning received into its lungs more than 700 cubic centimetres of water; and one part of the problem of resuscitation is the removal of this water from the lungs. Some of it is absorbed from the lungs, for if an animal is drowned in water stained with a pigment the colouring matter can be traced into the pulmonary lymphatics. The disturbance of the circulation is as important as the disturbance of the respiration; when it begins to fail, the right heart is distended and the abdominal viscera are engorged with blood.

The methods which have been invented for artificial respiration may be divided into those which endeavour to draw air into the lungs, allowing the elasticity of the chest wall to produce expiration; secondly, those which try to drive out the air in the chest, trusting to elasticity for the re-introduction of fresh inspiratory air; and thirdly, those methods in which both inspiration and expiration are produced mechanically. At the present time only four methods are really in use. MARSHALL HALL'S method is little employed at present, for in this country it has been almost entirely replaced by SILVESTER'S method, and it may safely be said that the procedure advised by SILVESTER is the most widely employed at the present time. HOWARD'S method is more used in the United States than in this country, but it is doubtful if it has any advantages over SILVESTER'S. The latest procedure is SCHÄFER'S and it is the method recommended by the committee of the Royal Society of Medicine appointed to considered the whole question of the best mode of resuscitating the apparently drowned. The committee was appointed at the request of the chief surgeon to the Metropolitan Police, the officers of which have for many years employed SILVESTER'S method. Many experiments were performed and estimations were made as to the amount of exchange of air effected by the various methods. The report points out that the means used for the resuscitation of the apparently drowned must be adapted to the circumstances under which drowning usually occurs. They must be simple and capable of being carried out by a single person. The committee considered that the method devised by Professor SCHÄFER fulfils these conditions better than the others. Further, the prone position favours the escape of water and mucus through the mouth and nose; a larger amount of air can be made to pass in and out of the chest than by any other; the upward pressure on the diaphragm stimulates the heart and there is less risk to the abdominal organs. The SCHÄFER method was described fully by Dr. KEITH in his third lecture and is not very widely known. The patient lies in the prone position with the face turned sideways, and the operator exerts firm pressure on the lower ribs and loins; this produces expiration and the removal of the pressure allows inspiration to occur. If this be done some 12 times a minute a very effective exchange of air occurs. The question naturally arises, Shall SCHÄFER'S method replace those previously in use? Dr. KEITH'S answer is that when intelligently and skilfully performed SILVESTER'S method is preferable to SCHÄFER'S, but that SCHÄFER'S method is simpler and therefore it is more easily carried out by the unskilled, though it is less effective. Most of SCHÄFER'S experiments were performed

[1] THE LANCET, March 13th, 20th, and 27th, 1909.

on living beings, and as the elasticity and tone of the tissues in the living are not identical with those of the drowned the conclusions based on these experiments are not so trustworthy as if they had been derived from experiments on dead bodies. What is needed is a careful record of the methods employed in all cases, both successful and unsuccessful; if records such as these were available conclusions of definite value could be formed. In 1776, when JOHN HUNTER was asked by HAWES for suggestions as to the resuscitation of the drowned, as we have already mentioned, he laid stress on the need for the accurate record of the means used and the degree of success attending them, but the recommendation has not been followed to any large extent, for in most cases the accounts are of the most meagre description. Dr. KEITH thinks that artificial respiration, however carefully performed, is not likely to be successful in more than one in 20 or 30 of the cases, but as it cannot be said beforehand which is the exceptional case artificial respiration should be performed with the utmost care in all. Appeals to the statistics at present available are vain. Successful cases are much more likely to be put on record than are those in which failure has occurred, but if we may judge by statistics every method has shown a large amount of success.

We cannot look upon the results of artificial respiration at the present time as satisfactory. Many cases do, indeed, recover, but it is probable that many die who might have survived had suitable treatment been adopted. We do not deny the great progress that has been made in the resuscitation of the asphyxiated and we recognise the enormous amount of care which has been expended in these researches, but we feel that there is much more to be done. It is possible that the impulsion and extraction of air by means of a machine, provided that care is taken to see that it is not used to excess, may yet replace other methods when the mechanism is at hand, for a machine is tireless and thorough, and less room is left for want of knowledge. Dr. KEITH is to be congratulated on having chosen for his Hunterian lectures a subject of such interest and importance.

Annotations.

"Ne quid nimis."

A "TUBERCULOSIS EXHIBITION."

UNDER the auspices of the National Association for the Prevention of Consumption and other Forms of Tuberculosis a "Tuberculosis Exhibition" is to be opened in the East-end of London at the Art Gallery, High-street, Whitechapel, on June 2nd, 1909, by the President of the Local Government Board. It is intended that this exhibition shall visit subsequently other poor districts of London in turn and afterwards make an extended tour of the provincial cities and towns. The whole of the movement is, we understand, to be purely philanthropic and educational, and free from commercial enterprise and advertisement of any sort; further, there will be no charge for admission. An influential organising committee has been formed, the composition of which assures that the exhibition is in good hands. The chairman is Mr. George Harwood, M.P., and amongst the medical members are Professor G. Sims Woodhead, Dr. C. Theodore Williams, and Dr. Arthur Newsholme. Dr. H. Hammond Smith is the organising secretary. Whilst not entirely neglecting the scientific aspect of the subject, the exhibition will be chiefly of a popular and educational character, and will seek, by the help of diagrams, models, actual specimens, and other means, to bring home to the people the nature of tuberculosis, the extent of its ravages, and the possibility of its prevention and arrest, as well as the methods to be employed to effect these purposes. Roughly speaking, there will be seven sections, showing (1) the extent of tuberculosis by means of diagrams and statistical tables; (2) the causation of tuberculosis; (3) "where tuberculosis lurks," with photographs and models of overcrowded and unhealthy dwellings; (4) how tuberculosis is spread, indicating the modes of infection by expectoration and milk; (5) how tuberculosis may be prevented; (6) how tuberculosis is arrested; and (7) a special section devoted to tuberculosis in children. We wish the exhibition every success. We have frequently insisted that the most powerful factor in the fight against tuberculosis is education of patients and their friends. It is important, however, to take advantage of every opportunity to instruct the public generally as to the simple means which may be adopted to live as healthy a life as possible under varying circumstances. In the crowded parts of large cities hygienic surroundings are at their worst, and it is therefore suitable that this exhibition should be held in the East-end of London and in other large centres. By means of lectures and demonstrations doubtless much can be done to teach the inhabitants the precautions which should be taken to insure thorough ventilation of the living rooms and the means which should be adopted for the disposal and destruction of the sputum. At the same time care should be taken not to induce too great a scare in respect to the infectivity of tuberculosis, otherwise the unfortunate sufferers from the disease may be treated as the lepers of old and unjustifiable hardships inflicted on individuals. Medical ideas on this point have lately undergone revision.

WILL ARTIFICIAL SYNTHESIS EVER SUPPLY THE WORLD WITH FOOD?

THE advance in the price of bread last week, due to financial operations which no one can approve, revives in the minds of chemists the possibilities of synthesis when applied to food production. It must be admitted that triumphant as are the very numerous synthetic processes which have been devised by chemists, yet very few of these relate to the building up of food materials from their elements. It is true the sugars have been so fashioned, but how long, laborious, and expensive does the process prove! The most vital constituent of food, the nitrogenous portion, or protein, is a building yet uncompleted by man's effort, although excellent foundations have been laid by the masterly work of Fischer. The simple adjustment of materials in the plant which furnish the important starchy foods is understood to some extent, but no man has been able to imitate it successfully, albeit carbon, hydrogen, and oxygen surround him on every hand. Bricks there are everywhere, but he cannot group them. Yet another important factor in diet is fat, but no chemist has dreamed of a mill which will serve out fat on an intake of grass. The fact is, chemistry succeeds better in the work of destruction than in the work of construction, and analysis must necessarily precede synthesis, so that composition and constitution must first be learned. The forces which determine this composition and constitution are the crux of the whole question, and this is where man is beaten. His food so far can only be produced through the natural synthetic mediums, the plant and the animal; agriculture is a practicable matter, but the artificial synthetic factory is not. Will it ever be? There are not a few eminent

scientific men who predict with confidence that the world's supply of food (it may be at a distant day) will be produced abundantly and constantly by humanly devised processes which will place questions of quantity on more certain bases than agriculture can promise to do. It is difficult not to be sceptical about such a contemplated consummation of man's ingenuity, and certainly much of the joy and romance of the world would be taken out of it if the rearing of plants and animals ceased to be a necessity of its existence. Still, the triumph which would imply that albumin, starch, sugar, and fat could be fashioned out of the mineral elements, carbon, hydrogen, nitrogen, oxygen, sulphur, and phosphorus is not beyond the bounds of imagination, only we must not wait for it to put an end to the "cornering" of the people's food.

DOUBLE HÆMOTHORAX IN MENINGOCOCCIC MENINGITIS.

DOUBLE hæmothorax is a very rare condition. At a meeting of the Société Médicale des Hôpitaux of Paris M. E. Apert reported a case, apparently unique, in which it occurred as a complication of meningococcic meningitis. A boy, aged three and a half years, was taken to hospital on Jan. 28th last in a state of collapse. The face was livid, the lips were pale, and the respirations were feeble and slow. He had been in good health until the previous day, when he awoke feverish; in the evening he vomited and cried. On admission pallor, coldness of the surface, feebleness of pulse and respiration, and general weakness were the dominant symptoms. The child lay prostrate and motionless on the bed and groaned. The abdomen was not retracted, there was no rigidity of the neck, and Kernig's sign was absent. The sounds of the heart could scarcely be heard and the respiratory murmur was very feeble. The child was covered with flea-bites, but there were also two purpuric spots of the size of a lentil on the lower limbs. The temperature was 99·3° F. In the evening the temperature rose to 101·1° and at 3 A.M. the child died. At the necropsy, on opening the thorax, the lungs had a greyish tint instead of the rosy colour which they show at this age. They appeared to be void of air and blood and were in a state of atelectasis, like the lung of a fœtus. On raising the lungs this condition was explained: each pleural cavity contained a gelatinous mass of clotted blood which occupied the whole of the costo-vertebral gutter and extended as high as the axillary line, pushing the lungs forward. In aspect and consistence the mass resembled quince jelly; in the upper part it was transparent and of a yellowish or slightly rosy tint, in the lower part it was thicker and brown. Evidently blood to the extent of more than a litre had been extravasated into each pleura. The peculiar appearance of the clot was due to slow coagulation, which allowed the red corpuscles to collect at the lower part. Slow coagulation is the rule in effusion of blood into the pleural cavity. But what was the cause of this effusion? The lungs and the pleuræ were quite sound. But the cellular tissue of the costo-vertebral gutter was œdematous and the intercostal and azygos veins were thromboscd and distended by black non-adherent clot. All the thoracic and abdominal organs were normal. On the convexity of the brain, in the fissures, and in the course of the vessels there were a dozen purulent subarachnoid tracts, the beginning of suppurative meningitis. There were no lesions at the base of the brain. Films of the pus showed in small numbers diplococci, mostly intracellular, which did not retain Gram's stain. The symptoms were thus due to the internal hæmorrhage. The child died before symptoms of meningitis had time to develop. The fact that the meningitis remained localised to some of the fissures on the convexity of the brain explained the absence of rigidity of the neck and Kernig's sign. The existence of hæmorrhagic forms of purulent meningitis is well recognised, but in the cases described the hæmorrhage has taken the form of purpura; sometimes hæmorrhage from mucous membranes has occurred, but never hæmothorax. Further, double hæmothorax is in itself a rarity. M. Apert has been able to find on record only two cases. Zahn of Geneva described one which resembles the case now reported in the fact that the vena azygos was thrombosed. M. Apert was unable to explain the connexion between the meningitis and the hæmothorax, and on reading this careful clinical account the difficulty will be recognised.

THE RETIREMENT OF DR. JOHN TATHAM.

WE learn that Dr. John Tatham, who has for many years been Superintendent of Statistics at the General Register Office, will shortly be retired under the age clause from his important post. Dr. Tatham has earned the gratitude of the medical profession generally, and in particular of those officially responsible for the public health of the country, by his admirable Supplementary Reports on the Mortality of England and Wales. His great statistical powers have ever been placed readily at the service of the medical profession where puzzling situations have arisen, and his exposition of medical statistics in the first volume of Allbutt's "System of Medicine" (second edition) is an introduction to a difficult subject which has been found of the highest value by many practitioners. We are informed that Dr. Thomas Henry Craig Stevenson, who has been assistant medical officer of the Education Branch of the Public Health Department of the London County Council, will succeed Dr. Tatham as Superintendent of Statistics. Dr. Stevenson is the joint author with Dr. A. Newsholme, the principal medical officer of the Local Government Board, of the "Graphic Method of Constructing a Life Table" and of other statistical papers. He was formerly assistant medical officer of health of Brighton, and he brings considerable experience to his new and important post.

THE LODGING ARRANGEMENTS FOR THE SIXTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

THE central booking office of the Royal Hungarian State Railways has issued a circular letter, dated April 15th, to explain the arrangements made for lodging members of the forthcoming International Congress of Medicine to be held at Budapest between August 29th and Sept. 4th. The office states that it has been intrusted with the arrangements for accommodating visitors to the Congress for its whole duration, and intends to make these arrangements in advance by issuing "accommodation orders." Such accommodation orders will be for seven days in hotels and eight days in private dwelling-houses, on the understanding that the day of arrival at hotels is to be taken as August 28th, but at private dwelling-houses August 27th. Should the arrival at Budapest take place after these respective days or the departure from Budapest before Sept. 4th, no reimbursement will be made for the time the lodgings are unused. The following tariff of lodgings is given:—In hotels (arrival on August 28th and departure on Sept. 4th): rent for a stay of seven days, prices in kronen (which may be read as shillings): Series A: single bed, K. 70–140; double bed, K. 84–210; three beds, K. 105–245. Series B: single bed, K. 48–69; double bed, K. 64–83; three beds, K. 80–100. Series C: single bed, K. 48–69; double bed, K. 35–63; three beds, K. 42–79. In private dwelling-houses (arrival August 27th, and departure on Sept. 4th): rent for a stay of eight days, prices in kronen: Series D: single bed, K. 51–70; double

bed, K. 76–100; three beds, K. 91–115. Series E: single bed, K. 31–50; double bed, K. 46–75; three beds, K. 61–90. Series F: single bed, K. 16–30; double bed, K. 30–45; three beds, K. 44–60. Such apartments may be engaged by the person who requires lodgings stating in which series and at what price he desires a room with one, two, or three beds and whether it is to be in an hotel or in a private house. He will be free to choose the price which he is prepared to pay according to the scale set out above, and this price must be sent to the central booking office in advance. In return for this remittance an "accommodation order" for an appropriate lodging will be sent to the applicant. The committee of the Congress has arranged that a commission of K. 8.50 per person shall be paid to the booking office in return for its trouble and expenses. This commission is to be sent at the same time as the rent and the receipt of it will be acknowledged separately. If a person thus taking a room should be prevented from attending the Congress and notify the fact before August 20th, the rent paid in advance will be refunded upon production of the accommodation order with a deduction of 10 kronen a head, but should such notice reach the central booking office after that date 20 kronen will be deducted for each person. We would add for our readers' benefit that members who desire to avail themselves of the proposals contained in this communication should consider them carefully and keep every document in connexion with their bargain, as failure to produce written evidence of similar contracts proved a fruitful source of trouble at the Madrid meeting of the International Medical Congress.

INFLAMMATION OF BURSÆ AND "RHEUMATISM."

IN spite of recent progress in diagnostic accuracy the term "rheumatism" is still used vaguely and is applied to many different conditions, often to any articular affection the nature of which is unknown. Bacteriology has done something to diminish the evil by separating from this miscellaneous group gonorrhœal and pneumococcic arthritis and acute rheumatism, but much still remains to be done. In the *Boston Medical and Surgical Journal* of April 1st, Dr. E. A. Codman has called attention to the fact that many obscure cases of pain about joints termed "rheumatism" are due to inflammation of bursæ or of the areolar tissue between the different planes of muscles. In the human body those tissues which move on one another and bear weight—namely, joints—have their points of friction defended by articular cartilage, but where there is much movement but no weight is borne a simple synovial membrane is interposed for the purpose of diminishing friction. Tissues which move on one another only to a slight extent are provided with an interposed layer of areolar tissue, the spaces of which act like a compound bursa. The cracking and snapping about joints which occurs in some persons is usually produced in bursæ. The very existence of most of the bursæ is often forgotten, and therefore an altered condition in them is not entertained in diagnosis, but no matter how small they are subject to inflammation. Normally their walls are very thin, but when inflamed they may become much thickened. Dr. Codman has recently called attention to the frequency and importance of inflammation of the subacromial bursa. Inflammation of bursæ may be due to injury, infection, toxic waste products in the circulation, and over-use. Dr. Codman thinks that the stiffness which occurs after unusual exercise is due to mild temporary inflammation of bursæ, tendon sheaths, and areolar tissue. The wonderful self-oiling mechanism of the body is thrown temporarily out of order. The bursæ become thickened with congestion and acute œdema, and their secretion becomes too viscid and fibrinous to allow easy motion. The areolar tissue being in a sense a compound bursa may also become inflamed. This Dr. Codman regards as the pathology of lumbago and "stiff neck." The function of the serous membranes—pleuræ, pericardium, and peritoneum—is the same as that of the bursæ, the diminution of the friction of parts which move on one another. Their inflammations may consequently be regarded as analogues of bursitis. This opens up an interesting field for comparisons when affections of bursæ have been more fully investigated; at present we have not much material for broad deductions.

THE EFFECTS OF WIRELESS TELEGRAPHY ON OPERATORS.

IT has been remarked that each step taken in the onward march of any applied science seems to bring into notice some fresh special pathological condition. Various previously unknown diseases dogged the steps of the earlier engineers, electricians, chemists, and balloonists. The dangers lurking in the Crookes tube—beneficent though it be when used under proper control—have been of late made tragically prominent. Amongst the numerous persons who are now learning to fly possibly some new pathological curiosity will before long come to be recognised. According to M. P. Bellile, a French naval surgeon on board the *Descartes*, which has been engaged in the campaign in Morocco, the members of the ship's company who were employed in wireless telegraph duty developed various affections in consequence of the action of the Herzian waves. Most commonly the telegraphists complained of their eyes, a slight conjunctivitis similar to that occurring amongst those who work with arc lamps being found. Although this of itself was not generally at all serious, yet in one case where the attacks recurred again and again, keratitis was produced which resulted in a leukoma of the right cornea and consequent impairment of vision. In order to protect the eyes from damage by the ultra-violet rays of the electric emanation, which have a very powerful action, it was recommended that yellow or orange glasses should be worn. Not only were the eyes of the operators affected, but two cases of eczema—one of the wrist and one of the eyelid, both very difficult to cure—were seen, probably due to the same cause. Lastly, one of the officials who had been employed for several years in wireless telegraphy suffered from painful palpitation of the heart which came on after working for any length of time at the instruments for sending messages. This man was quite free from any organic lesion of the heart. M. Bellile is disposed to think that a good many of the cases of "nervousness" and neurasthenia which seem now to be getting rather common among naval men may be due to the work which is being done in wireless telegraphy.

CONGENITAL NEPHRITIS.

THE kidneys of young children appear to be very susceptible to irritation from causes which have little or no influence in adult life. Thus, in addition to the ordinary causes of nephritis, such as passive congestion, ingested irritants, and the infections, such conditions as acute indigestion, inflammatory conditions of the alimentary tract, cold plunges, exposure to high degrees of heat, calcareous and hæmosiderin deposits in the tubules, interstitial hæmorrhages, and even icterus, may all be concerned in the production of nephritis in early life. Other causes are uric acid infarcts and parental syphilis, both of which may produce changes in the kidneys before birth. In the latter case the nephritis is usually of interstitial type, but parenchymatous changes occur in some cases. Dr. Howard T. Karsner contributes an interesting study of these conditions to the February number of the *Proceedings of the Pathological Society of*

Philadelphia and records a case of acute parenchymatous nephritis in a newly born infant. The infant was born of a healthy Irish woman and showed no sign of syphilis. The mother also presented no evidence of that disease, but no information was obtainable as to the father. Labour was normal and the infant showed no abnormality except cyanosis which persisted even after respiration had been established. Shortly after cutting the cord the child became more deeply cyanotic and death occurred about 45 minutes after birth, in spite of an attempt to inject strychnine directly into the heart. The mother made an uninterrupted recovery. Her urine was of normal character. At the necropsy on the infant both kidneys showed congestion of the cortex and injection of the pyramids, the lungs were found to be congested, the liver was in a state of cloudy swelling, and the foramen ovale in the heart was patulous. Histologically there were found interlobular fibrosis in the pancreas, mucoid degeneration of the gastric mucosa, and slight lymphoid infiltration of the small intestine. The kidneys showed changes characteristic of acute parenchymatous nephritis. No definite cause to account for the nephritis could be found. No indication of syphilis was apparent in the infant, and Dr. Karsner is therefore disposed to relegate his case to the type referred to by Holt as primary nephritis. After a careful search of the literature he finds but few references to similar cases, although Descroizilles, Cotton, Baginsky, and Henoch all mention the occurrence of nephritis at or shortly after birth, while Ashby and Wright affirm that infants may be born with acute nephritis and Ashby has recorded such a case. Dr. Karsner gives references to the literature of the subject and his paper forms an interesting addition to our knowledge of congenital nephritis.

FLOCK AS A POSSIBLE DISTRIBUTOR OF VERMIN.

OUR readers will remember that in THE LANCET of Jan. 23rd we gave an account of the process of manufacturing flock, both dirty and clean, as investigated by our Special Commissioner. The details of the former were disgusting in the extreme, but one department at least of the Government is alive to the dangers to public health which exist therefrom. An inquiry was set on foot by the Local Government Board in 1908 conducted by Dr. Reginald A. Farrar, whose report is to be published later. Part of the inquiry centred in the question of the limits of vitality of the vermin with which the materials used in manufacturing inferior flock bedding are sometimes infested, and this investigation was undertaken by Mr. Cecil Warburton, F.Z.S. The parasite selected was the body louse, *Pediculus vestimenti*, and after various experiments as to the best way of keeping the lice alive in incubators and feeding them on rats, which all failed, Mr. Warburton, with the heroism that marks the true scientific investigator, determined to make himself the *corpus vile*. He states: "Examples of Pediculus vestimenti were imprisoned, together with a small piece of cloth, in a glass tube about three inches by five inches, plugged with cotton-wool. The glass tube was inclosed in a metal case open at one end, to guard against possible accidents. The whole was kept close to the person, night and day, except when feeding was necessary, which was at least twice in the 24 hours. The tube was then opened and the small piece of cloth, with the lice adhering to it, allowed to fall upon the back of the hand." Here they fed. Lice were bred in this manner and their life-history was thus ascertained. The eggs were reared under the same conditions as the mother had been kept and finally the life-history could be detailed as follows. Incubation period, eight days to five weeks; period from larva to imago, 11 days; non-functional mature condition, four days; adult life, male, three weeks; female, four weeks. With regard to the possibility of flock acting as a transmitter of vermin experiments showed that lice would pass safely through the "devil," for stuffs known to be verminous were put through that ominously named machine, and in the sacks in which the flock was packed dead lice were found which had crept out of the flock after it was packed. They had therefore evidently not been killed by the tearing process. The conclusion of the whole matter was that lice, and *a fortiori* their eggs, may pass through the flock-making machine without being crushed. The lice themselves would most probably not be alive when the flock was converted into bedding, but as the eggs take a month or more to hatch it is quite possible that living eggs might be present in bedding. We await Dr. Farrar's report with interest, and it is earnestly to be hoped that the Local Government Board will take immediate and energetic action to stop the sale of filthy flock. An increase in price of about 2*s.* per bed would, as our Commissioner showed in his report referred to above, pay the manufacturer for purifying his flock before making it into bedding.

THE SPRINGTIME HOLIDAY.

THE sunshine of the late Easter week and the present weather indications point to the fact that those who are taking their annual holiday, or some portion of it, at this early period of the year have been well justified of their action. There is little doubt that the early autumn will remain the favourite season for the migration of townsmen to the seashore, the hills, or the moorlands, for the slackening of every kind of business in August and September has by now become so fixed a feature of the commercial and professional year that we can scarcely expect the date of the holidays to be moved forward by an earlier general exodus to the country. It is probable, too, that the majority of city dwellers prefer to leave their offices and streets at the time when we are accustomed to feel in England the hottest days and sultriest nights of the year. But the man who can arrange to leave his work in late April and early May either for his favourite golf-links or trout stream, or simply to wander on foot or cycle through the highways and flowering byways of the countryside he loves best, now that "Earth, unto her leaflet tips, tingles with the spring," provided only that he is blessed with rainless skies, will carry back to his work a sense of refreshment that the full-blown splendours of the countryside in early autumn can hardly afford him. And even if his mind be of such a cast that it neither regards the promise of the sweet of the year with special gladness nor feels any tinge of regret in the ripeness of harvest-time, if, in a word, all he asks of his holiday be a good table and a soft bed and fine days in the open air, he will still find that such things may be attained with more readiness and at a smaller cost in Maytime than in August, and he will, moreover, take his pleasure without encountering those congregations of his fellow-townsmen which everywhere invade the enjoyment of the autumn holiday. To those medical men whose work lies in towns the spring holiday may well bring a particular recreation of mind and body. The mere fact of getting away from the frets and ills of his fellow men, with whom in his professional life he comes into such constant and intimate contact, is of itself a refreshment, and, as we have said, this solitude is more easily attainable in the spring than in the autumn. We know that many medical men are only justified in leaving their practice at the time when many of their patients are away from home, but if the money can be sacrificed the return in health of the spring holiday—though only for few days—will be found very great. We acknowledge that most who are fathers of families, whether

medical men or laymen, will feel themselves bound to the autumn holiday by the dates of their children's school holidays, but, however unpopular be the suggestion, we venture to remark that in certain instances and when funds permit a separate holiday for the breadwinner may afford him a rest unattainable in the company of his family. In any case there are a large number of childless practitioners to profit by our advocacy of the springtime holiday, which must, however, be read as conditional upon a reasonable attitude on the part of the weather, for a wet May will not only be as annoying as a wet August but in all probability will be a good deal colder. But we must close this recommendation of the spring holiday by admitting that the counsel to take it is a counsel of perfection, for we know that medical men in full swing can take only too often no holidays at all.

MEDICAL MISSIONS AND THE SOCIETY FOR THE PROPAGATION OF THE GOSPEL.

THE 208th anniversary of this society will be held from April 24th to 30th, and on April 28th at 8 P.M. a meeting will be held at the Church House in connexion with the Medical Missions Department. The speakers will include Sir Dyce Duckworth, Dr. F. H. Champneys, and Miss Jane Walker, M.D. The connexion between the priest and the medical man is, of course, a very ancient one, and medical missions are one of the most valuable portions of mission work, for the healing of the sick leads in very many cases to those who are healed and their friends listening to the new message. The society appeals for fully qualified medical men and women, but, of course, the fulfilment of this idea will cost money. Not only does it involve the keep at least of the medical missionaries, but money is also needed for hospitals and dispensary buildings and the supply of instruments, drugs, dressings, and the like. There is now a movement both in medical and religious circles as to a closer union between the work of the physician and that of the priest, and the work of medical missionaries is one of the best ways of showing that these two offices may be combined in one person without the functions of the one in any way infringing the responsibilities of the other.

A MODIFICATION OF THE CUTANEOUS TUBERCULIN REACTION.

THE cutaneous tuberculin reaction for the diagnosis of tuberculosis was first introduced by von Pirquet and the technique recommended by him was as follows. The skin, preferably of the arm, where the test was to be made was thoroughly cleansed and a drop of a 25 per cent. solution of Koch's old tuberculin was placed on the arm; the skin was then scratched through the drop by means of a vaccinating lancet or Pirquet's raspatory. For purposes of control other scratches were made without the tuberculin having been applied. Von Pirquet subsequently thought it better to use different concentrations of the solution. After about one and a half hours a very slight redness appeared at the spot of inoculation and also at the spot of the control scratch. This was regarded as due to the slight traumatic irritation caused by the actual performance of the inoculation. This redness disappeared after an hour or two, and if a positive result followed on the site of the inoculation of tuberculin, in about three hours a reddening of the skin appeared, which increased until it reached a maximum; this usually took from 12 to 24 hours. In the *Répertoire de Pharmacie* for February a description is given of Lautier's modification of the above process. A pledget of cotton-wool of the size of a pea is moistened with three drops of a solution of tuberculin and applied to the unbroken skin on the outer surface of the arm. The application is covered with gutta-percha tissue and a pad of cotton-wool, kept in position with a bandage. It is important that the skin should be intact and cleansed with alcohol and ether just before the dressing is applied. Within 24 hours, if the reaction is positive, the patient will complain of irritation which increases during the ensuing 24 hours. The dressing is then removed, and, in the case of a positive reaction, redness and sometimes papules will be observed. The reaction may manifest itself within half an hour and varies in intensity as regards redness, swelling, dryness to the touch, and tenderness produced by pressure. The results of this method were controlled by the ophthalmic reaction.

THE NURSING AND MIDWIFERY CONFERENCE.

DURING last week a Nursing and Midwifery Conference and Exhibition was held in the Grafton Galleries, Bond-street, London, W. It was opened on April 14th under the chairmanship of Mrs. Stephen Glanville, and continued for four days, during which many matters important to the profession of nursing were dealt with in a series of debates. We may mention especially the remarks of Dr. T. O. Wood, who in reviewing the present position in the nursing world said that the chief want felt was a uniform system of training, examination, and certification; that a definite standard of proficiency might be reached which would entitle successful candidates to a qualification—not of this or that hospital—which might be a variable quantity—but of one great qualifying body. Nurses might broadly be divided into the following classes: (1) those trained at general hospitals in both medical and surgical nursing; (2) general hospital nurses who have in addition special hospital training, as in fever or children's hospitals; (3) obstetric nurses or midwives; and (4) male and female nurses trained in asylums to attend upon the insane. He referred to the several organisations that existed to register these classes—namely, the Royal British Nurses' Association, which was promoting legislation for the State registration of nurses, and the Medico-Psychological Association of Great Britain and Ireland, which had already one uniform standard of training, examination, and certification throughout the kingdom and the colonies. Dr. Wood also mentioned the Asylum Workers' Association, Queen Victoria's Jubilee Nurses, and the association known as the Midwives Institute. Dr. Wood said that he was glad to see that in the Bills before Parliament for the State registration of nurses the medical profession was well represented upon the proposed council. If State registration became an accomplished fact the scale of fees would have to be arranged upon a reasonable basis, as otherwise many nurses would be debarred from registering and the movement would be a failure. On the same day a discussion was held upon the period of time requisite to train midwives in aseptic principles, when it was generally agreed that the three months enforced by the Central Midwives Board was inadequate for the purpose and that a year's training was desirable. On the last day of the Congress Dr. David Walsh dealt with the vexed question of hospital accommodation for the middle classes.

CONDEMNED FOOD.

THE annual report of the Manchester Port Sanitary Authority shows that instead of becoming less there is a large increase in the amount of condemned food-stuffs. It may be remembered that not very long since Liverpool traders protested against what they seemed to consider the undue severity of the tests used by the Manchester authority. The gross total of condemned food was 881 tons, a large increase on the 216½ tons condemned during the ten months in the previous year. Of grain, 694 tons have been seized

and dealt with, the greater part having been released on the medical officer having been satisfied that the particular parcels would not be used for human food. It may be desirable now and then to follow some of these parcels in the changes they undergo in the process of manufacture, so as to make sure that humanity is not fed with them. As is always the case, it is the small percentage of wrong-doers who create the necessity for what might be termed the "policing" of the whole system of this class of trade. There was rather a large importation of pigs' tongues, packed in barrels and preserved in what is known to the experts as "patent pickle." On analysis two points came out in the report, viz.: "That the sample containing the larger proportion of preservative showed the greatest amount of decomposition as gauged by the amount of carbonate and free ammonia; and that the tongue contained a larger percentage of boracic acid and a less percentage of sodium chloride than the liquor." The report deals also with the need for a proper definition of the terms "diseased, unsound, unwholesome, or unfit for the food of man." There seems to be a very prevalent idea among importers that articles should not be condemned unless it can be distinctly proved that they are unfit for the food of man, i.e., unless they may be supposed to exercise a distinct injurious influence on the human organism. This raises a curious question. Will a set of "vile bodies" be set apart for experiment? Probably some authority will have to go to the High Court, if not further, for a proper legal definition to be framed.

THE SECOND INTERNATIONAL MEDICAL CONGRESS FOR INDUSTRIAL ACCIDENTS.

THE Permanent Committee of the International Medical Congress for Industrial Accidents after the first Congress, which was held in Liège, selected Rome for the site of the second Congress, as our Italian correspondent announced in a recent letter. The Italian organising committee appointed an executive committee to settle upon details and the date of the Congress was fixed for May 23rd to 27th. The matters to be discussed at the Congress are founded upon the idea that medical science ought to do its best for the just application of social laws, for the protection of workers, and for the due development of industries and of social well-being. The committee has therefore drawn up the following programme of subjects for discussion: 1. The organisation of a medical and surgical service for the treatment of industrial accidents and for the watching of their remote consequences. 2. Forensic medicine in relation to industrial accidents and the principles by which experts should be guided. 3. Diagnosis and prognosis of neuroses brought about by industrial accidents. 4. Estimation of capability for work before and after accident. 5. The influence of the various ways of compensation upon the evolution of post-traumatic nervous affections. 6. Statistical observations from the medical point of view as regards the application of the law bearing on industrial accidents. 7. Capacity for useful work of organs injured in industrial accidents. Members attending the Congress can read papers upon matters connected with industrial accidents other than those suggested in the above programme if they like. The subscription to the Congress is 20 francs for members, for ladies and associate members 10 francs. These sums should be sent to the treasurer, Professor A. Asarelli, 38, Via Borgognona, Rome. The President is Professor Salvatore Ottolenghi, and the general secretary is Dr. Tito Ferretti. Though it is unlikely that many British medical men will be able to afford either the time or the money to attend the Congress, yet it is to be hoped that a goodly number will be able to send 20 francs to the treasurer for the sake of the literature which will follow hereafter. Diseases and accidents due to employment are day by day taking a more important place in medicine and surgery, and the reports of this Congress cannot fail to be of interest and of value.

Dr. Arthur Eastwood, bacteriologist to the Royal Commission on Tuberculosis, has published a report dealing with the methods adopted in various American States for the control of tuberculosis amongst herds of cattle, for the protection of human beings from bovine tuberculosis, and for the supply of clean milk. This report, which we shall consider in a future issue, was the outcome of an investigation made by Dr. Eastwood at the conclusion of the International Congress on Tuberculosis held last year at Washington by the desire of the President of the Local Government Board, under whose authority the report is published.

A TELEGRAM from the Governor of Hong-Kong to the Secretary of State for the Colonies states that 7 cases of plague were reported during the week ending April 17th, and that the number of deaths was 6. A telegram from the Officer Administering the Government of Mauritius to the Secretary of State for the Colonies reported the occurrence of 2 fatal cases of plague on April 17th.

WE regret to announce the death of Mr. Simeon Snell, F.R.C.S. Edin., which occurred at Sheffield on April 17th. Mr. Snell was elected President of the British Medical Association at its annual meeting last year and was ophthalmic surgeon to the Sheffield Royal Infirmary.

Dr. J. Lucas-Championnière, president of the International Surgical Congress, has consented to deliver the annual address to the Cardiff Medical Society on Friday, June 4th. The subject of his address will be the Treatment of Fractures.

THE ROYAL SANITARY INSTITUTE.—The President, his Grace the Duke of Northumberland, will preside at the annual dinner of the institute, to be held on May 11th at the Langham Hotel. A meeting of the institute will be held in the medical theatre of Birmingham University on May 8th, at 11 A.M., under the chairmanship of Colonel J. Lane Notter, R.A.M.C., when Mr. J. Malcolm, F.R.C.V.S., veterinary superintendent to Birmingham corporation, will open a discussion on Tuberculosis and the Milk-supply.

SOCIETY FOR THE RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of this society was held on April 14th, Dr. G. F. Blandford, the President, being in the chair. 11 directors were present. Since the last court three members of the court had died—Mr. T. Laurence Read (vice-president), and Mr. G. Eastes and Mr. Charles E. Baker (directors). A vote of condolence was passed to the families of these gentlemen. Application for membership had been received from two medical men and they were duly elected members of the society. One of the annuitants, an orphan, had died. Her mother up to the time of her death had also been in receipt of grants. The father had paid in subscriptions £14 14s. and his widow and orphan had received from the funds of the society £960. Five letters asking for relief had been received from widows of medical men, but this had to be refused as their husbands were not members of the society. Membership is open to any registered medical practitioner who at the time of his election is resident within a 20 mile radius of Charing Cross. The subscription is 2 guineas per annum, and relief is only granted to the widows and orphans of deceased members. Full particulars may be obtained from the secretary at the offices of the society, 11, Chandos-street, Cavendish-square, London, W. The invested funds of the society now amount to over £100,000. Thursday, May 20th, was fixed for the annual general meeting, due notice of which will be posted to the members on May 1st.

SOME HITHERTO UNKNOWN CENTRES OF ENDEMIC PLAGUE IN THE KIRGHIZ STEPPES.

(BY THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.)

RATHER more than a year ago the Russian Imperial Plague Commission issued a volume of nearly 500 pages, dealing with the subject of plague outbreaks in the country about the mouths of the Volga, in the Astrakhan government, in the Kirghiz Steppes, and adjoining regions. The volume[1] has only now reached my hands; it throws valuable light on the records of a series of epidemics, many of which have hitherto escaped notice in other countries and which are of the highest epidemiological interest and importance. A brief summary of the contents of this volume will be of use to many readers of THE LANCET.

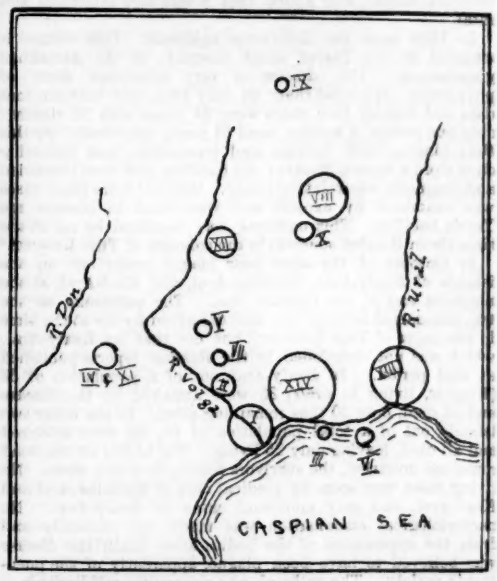
The work is divided into three parts: the first is entitled "Plague in the Astrakhan Border, its Epidemiology, and a General Review of the Measures Taken;" the second, "Individual Inspection of the Population of the Inner Bukéef Horde and Adjoining Regions;" and the third, "Trade Routes in the Inner Bukéef Horde and Adjoining Regions." Each section has been written by medical officers, and the investigations were entirely conducted in connexion with the plague outbreaks and with a view to throwing light on their character and origin and on the best means of controlling or exterminating the disease.

In the first section an account is given, so far as it is known, of the records of plague in these regions from the earliest times down to the famous epidemic in Astrakhan in 1877 and that in Vetlianka and other villages on the Volga in 1878–79. The authors believe that before the nineteenth century the historical plague outbreaks in Russia always had their origin in the west and that the Astrakhan border played no part in their etiology or spread. On the other hand, in the two principal epidemics of the nineteenth century, those of 1807–08 and 1877–79, the disease undoubtedly came to Russia through those regions. The Astrakhan and Vetlianka epidemics they believe to have been caused by an imported infection from the endemic centres of plague in Mesopotamia. Those outbreaks were thought to have been the last in Europe before the date of the recent revival of the disease in China and India and, in more or less pandemic form, through a great part of the world. But, as the following list shows, there was an epidemic on the northern shores of the Caspian Sea some time in the "eighties" of last century, and the first of two epidemics in Aksai occurred as early as 1896, or at a time when the pandemic of plague had not, as far as was hitherto known, spread beyond India and China.

The following is the complete list of plague epidemics (known or suspected) in the Astrakhan border since 1877:—

I. 1877–78. In the neighbourhood of Astrakhan.
II. 1878–79. In Vetlianka and other villages on the Volga.
III. 188?. On a Kirghiz island at the north end of the Caspian Sea, near the village of Djambai.
IV. 1896. First epidemic in Aksai.
V. 1899.* In Kolobovka.
VI. 1899. On the Caspian islands of Kishkiné-Aral, Kiné-Aral, and Irsaly-Aral.
VII. 1900–01.* In Vladimirovka (Tsaref *uyezd* of Astrakhan government).
VIII. 1900–01.* In the Talof region of the Inner Horde (in four settlements).
IX. 1900–01.* In the village of Alexandria (Novoïzensk *uyezd* of the Samara government.
X. 1902.* In Ush-Kuduk (in the Talof region of the Inner Horde).
XI. 1902.* Second epidemic in Aksai.
XII. 1903.* In the village of Bulkof and three adjoining settlements, in the Tsaref *uyezd* of the Astrakhan government.
XIII. 1904.* In the Gurief *uyezd* of the Uralsk province.
XIV. 1905–06.* In the "Maritime" districts of the Astrakhan government, in the Narynsk district of the Horde, and on the island of Fedr (Caspian Sea).

An asterisk in this list indicates that bacteriological proof that the disease was plague was available. The scene of each outbreak is shown by means of a circle with the corresponding Roman figure in the accompanying map (modified from a large and detailed map in the volume under notice). There were thus 14 outbreaks in 28 years, including some that passed at the time almost or quite without record and are only presumably examples of plague outbreaks; the presumptive evidence is, however, in most instances very strong. The authors of the report believe that the infection of the 1877–79 outbreaks never died out; that for some 20 years it produced occasional epidemics, which caused little remark, though in some instances they led to a very high mortality (as near Djambai in the "eighties"); and that since 1899 the disease has been truly endemic, causing yearly epidemics in different places in a region bounded on the east by the Ural river, on the west by the Volga and the country adjoining the angle where the Volga approaches the Don, on the south by the Caspian Sea, and on the north by the Novoïzensk district of the Samara government. The reports are accompanied by a series of valuable maps and diagrams and charts, fully illustrating the history and geography of these various outbreaks, and greatly facilitating the comprehension of this little known chapter in epidemiology.



Sketch map of regions north of the Caspian Sea where plague is endemic. The circles show the position of the 14 different epidemic outbreaks. Their numbers correspond to those in the list given in the text.

The 1877–79 outbreaks have been too often described to need any further reference here. There follows a period of 17 years of doubt and uncertainty. Some time in the "eighties" of last century a deadly epidemic occurred on an island inhabited by Kirghiz, situated at the north end of the Caspian Sea and not far from the village of Djambai on the mainland. No skilled observer saw any of the cases. The local authorities sent a steamer to the island with a commission instructed to investigate the outbreak; but, "it is said," none of the commissioners dared to land for fear of the infection; they contented themselves (again "it is said," in the words of the report) with throwing overboard two bottles of brandy for the wretched islanders. Every inhabitant of the island is said to have died. It is uncertain whether the disease was actually plague, as the most prominent symptoms were said to have pointed to some cerebral affection; but the authors of the report are none the less inclined to believe that it was an outbreak of plague. Another unrecorded outbreak is thought to have occurred in the Krasnoyarsk region of the Astrakhan government, also at the end of the "eighties." No direct evidence is available, but a local official having seen the later (and proved) epidemic of plague in these regions declared that he saw a similar fatal disease in the place and at the time just named, that the symptoms were identical, and that about 40 deaths occurred on the earlier occasion.

In 1896 occurred yet another unrecorded epidemic; this was in the village of Aksai, in the Tcherno-Yar district of the Astrakhan government. The village is situated on the

[1] Sbornik Rabot po Tchumyé. Edited by Dr. V. I. Isaief, Honorary Physician to H.M. the Tsar.

Aksai, a stream which flows into the Don. In September, 1896, a fatal disorder broke out among the 2000 inhabitants, and in the course of three months caused the death of some 60 persons. When six years later the epidemic of plague (proved bacteriologically), which is described below, occurred here it was recognised that the mortality in 1896 must have been due to the same disease. Several whole families were carried off by the infection. The district medical officer, who lived at Tcherno-Yar, 113 versts from Aksai (this detail throws a lurid light on the situation), described the disease as typhoid fever with enlargement of glands, particularly in the groin, and occasionally with petechial rashes, and added that it was very infectious and fatal.

In 1899 came the Kolobovka epidemic. This village is situated in the Tsaref *uyezd* (district) of the Astrakhan government. The disease—a very infectious form of pneumonia—appeared there on July 16th, and between that date and August 12th there were 24 cases with 23 deaths; only one person, a woman, aged 51 years, recovered. By this time plague, both bubonic and pneumonic, was becoming once more a known disease; the bacillus had been identified and diagnosis was relatively easy. Material from these cases was examined by experts and was found to contain the Yersin bacillus. This outbreak was described by me at the time (from Russian sources) in the columns of THE LANCET.[2]

In October of the same year plague broke out on the islands of Irsaly-Aral, Kishkiné-Aral, and Kiné-Aral, at the northern end of the Caspian Sea. The outbreaks on the two last-named islands were also described by me at the time in the pages of THE LANCET,[3] but not that on Irsaly-Aral, which was not mentioned in the Russian reports published at that period. In Irsaly-Aral, out of a population of 52 (Kirghiz, living in *aouls*) 25 were attacked by the disease and 22 died, only 30 thus remaining alive. In the other two islands, out of a total population of 64, 39 were attacked and all died, leaving only 25 living. The bodies of the dead remained unburied, the survivors fearing to touch them. No living cases were seen by medical men in Kishkiné-Aral and Kiné-Aral, and only moribund cases in Irsaly-Aral. No bacteriological examination was made, but clinically and from the appearance of the bodies after death the disease was believed to have been plague, apparently of the pneumonic variety. The outbreak was apparently self-limited.

In December, 1900, plague was recognised in the Vladimirovka *sloboda* (= large village), again in the Tsaref *uyezd* of the Astrakhan government, lying on the left bank of the Volga, 150 versts south of Tsarytsin. The outbreak probably began in September. 18 cases of the disease were registered and of these 16 died. The disease was bubonic in character; the cases were seen on this occasion by medical men, and detailed clinical histories, with temperature charts, are published with the reports. Bacteriological examinations were also made and established beyond doubt that the disease was in fact the plague.

On Dec. 23rd (Old Style), 1900, the existence of a fatal disease was reported from the *urotchishché* (= collection of *zemlianki*, or half-underground earth-huts) of Tekebai-Tubek. This is situated in the Talof region of the Inner Kirghiz Horde, 40 versts from the railway station of Alexandrof-Gai and 18 from the town of Talovka. The disease apparently began in another *urotchishché*, that of Atchikbai, 25 versts further south; then spread to Tekebai-Tubek; later it appeared in a third, that of Mereké, eight versts from the second; and still later was carried by refugees to a fourth, that of Karakuga, on the borders of the Uralsk province. In the first three places, in the course of a month and a half, the disease appeared in 28 different earth-huts (23 in Tekebai-Tubek, four in Mereké, and one in Atchikbai). There were 154 cases in all and 140 deaths (124 in Tekebai-Tubek, 13 in Mereké, and three in Atchikbai). The total population of the infected huts was 174, so that 90 per cent. of these fell ill and 80 per cent. died. In 15 huts, containing 74 persons, every person died. The disease was apparently pneumonic plague; neither buboes nor petechiæ were seen in a single case. Necropsies (made in 14 cases) and bacteriological examinations showed that the disease was pneumonic plague, with, in some instances, a mixed infection with the plague bacillus and the pneumococcus. In Karakuga there were 14 cases and 13 deaths. But here energetic measures were taken to put an end to the epidemic, including the isolation of the sick and the inoculation with Haffkine's prophylactic of 170 persons, and the outbreak declined from the moment these measures were put in force.

In March, 1901, an outbreak of plague was discovered in the village of Alexandria, in the Novoüzensk district of the Samara government, immediately adjoining the above-named Talof district of the Inner Horde. The village lies on the same stream (the "Little Uzen") as Tekebai-Tubek, just named above. The disease appeared there in the later months of 1900. No case was seen by a medical man. Out of a population of 424 over 60 died. In the early months of 1901 a few more deaths occurred; a bacteriological examination was then made in two instances, but the plague bacillus was not found. Nevertheless, the authors of the report believe the 1900 outbreak to have been one of plague, most of the cases being of the pneumonic variety, and that there was probably a mixed infection with the plague bacillus and the pneumococcus. Some cases of anthrax (proved bacteriologically) occurred about the same time and gave rise to the theory that the outbreak was not one of plague but of anthrax. On the other hand, it is pointed out that the latter disease is of frequent occurrence in these regions, that plague and anthrax have on other occasions been seen to coexist, and instances are quoted (in detail) of persons suffering from the two diseases at the same time. The existence of anthrax in the village does not then exclude the possible presence of plague, and the fatal epidemic in the village of Alexandria is thought to have been of the same nature as that in Tekebai-Tubek and the adjoining places.

In 1902 two plague outbreaks occurred in these regions: the first in the *urotchishohé* of Ush-Kuduk, in the Talof region of the Horde, where six cases and five deaths were recorded, and the second in the village of Aksai, already mentioned as the scene of an unrecorded epidemic in 1896; here 33 cases and 20 deaths were registered.

In 1903 plague appeared in the village of Buikof, in the Tsaref *uyezd* of the Astrakhan government, and in three adjoining *khutors* (= large farms), bearing the names of Bulukhta, Muguta, and Zubof; 14 cases and 12 deaths occurred in all. The diagnosis of plague (bubonic) was confirmed by bacteriological inquiry; here again anthrax (also proved bacteriologically) was prevalent at the same time.

In 1904 a much more serious outbreak occurred in the Gurief *uyezd* of the Uralsk province. The Kirghiz inhabitants of three villages—Yamankhalinsk, Saraitchikof, and Sorotchinsk—situated 35 versts along the postal track from Gurief to Uralsk and on either side of the Ural river were affected; between Nov. 1st, 1904, and Jan. 4th, 1905, no less than 415 deaths occurred.

An even more deadly epidemic broke out in 1905. In August of that year plague appeared in the *Primorskia* ("Maritime") districts of the Astrakhan government, in the Narynsk region of the Horde, and on the island of Fedr; all these districts are at the north end of the Caspian Sea. The existence of the outbreak here only became known two months after it had begun; then when a medical mission arrived on the spot over 500 dead bodies were found in 42 different *urotchishchés*. No exact figures were available as to the number of cases or deaths, but approximately it was reckoned that 565 persons fell ill and 527 died. The proportion of cases to the whole population was no less than 65 per cent.

This completes the list of outbreaks dealt with in the volume under notice. It will be seen that it brings the records down only to the yea; 1905. Other epidemics have undoubtedly occurred since; as late, indeed, as last summer it was reported that nine cases with four deaths from plague had occurred among the Kirghiz inhabitants of the steppes of the Astrakhan government.[4] No further details were available at the time, and it may be hoped that the Russian Plague Commission will continue to publish—and at not too long intervals—reports on the further history of the disease in these regions as full and detailed as those in the present volume.

It is clear from the foregoing that the stretch of country about the mouths of the Volga and Ural rivers must be regarded as, for the present, a true endemic area of plague, comparable to those that formerly existed in Mesopotamia, in portions of Persia, in Assyr, and elsewhere. It is also clear that the practical difficulties in the way of stamping

[2] THE LANCET, Sept. 16th, 1899, p. 810.
[3] THE LANCET, Feb. 3rd, 1900, p. 351.
[4] THE LANCET, Oct. 3rd, 1908, p. 1040.

out the disease in this area are very great. Fortunately, however, just as in the case of the other historical areas of endemic plague just mentioned, the disease does not show any tendency to spread from the infected regions to others and thus to cause a widespread epidemic. The Kirghiz Steppes hold little direct communication with the rest of the world and thus the danger is limited. But for the inhabitants of those isolated regions the danger is great, one might say terrible, as is shown by the above-quoted records of whole households, whole villages, whole islands losing their entire population in the course of a few weeks or months from the deadly disease with no outside help and no hope of escape.

There is no doubt that the Russian authorities realise the situation, and the excellent work recorded in the second and third sections of the volume under notice should prove of great value in laying the foundations for practical remedial measures. In the second section a full account is given of the ethnology of the inhabitants of the infected regions, including an interesting description of the various types met with, their customs, habits, religions, and mode of life; of the climatology, flora and fauna of the country; of the vital statistics, so far as known, of the inhabitants; of the principal reigning diseases; of the existing provision for medical aid; and, finally, of the results of an individual inspection of the entire population not only of the Inner Bukéef Horde of Kirghiz but also of the Uralsk province and of Transcaspia. Finally, the third section deals with the trade routes in these regions and the principal lines of communication between them and other territories in Europe and Asia. It is unnecessary to give here even a summary of these chapters in which the matter is discussed from the point of view of history.

A vast mass of material of a highly interesting and useful character (and that not solely from the medical point of view) has been brought together in these reports, and it is a matter for regret that they appear in a language but little known outside Russia. Before closing this brief summary it should be added that in none of the plague epidemics above described was there evidence of the disease being spread by rats or other rodents. At the time of the Kolobovka outbreak 4128 different animals (including rats, mice, bats, marmots, snakes, and many domestic animals) were examined, and in none of them was the plague micro-organism detected. In the Vladimirovka outbreak and in those at Tekebai-Tubek and adjoining places inquiry was specially made as to the occurrence of mortality among rats, and in both with negative results. The authors of the report consequently come to the conclusion that rats and other rodents have not played any part in the spread of plague in these regions, though they are careful to add that the evidence is only presumptive and incomplete, and that caution is necessary in any case in coming to an absolutely negative conclusion.

Constantinople, April 3rd.

SANITATION IN INDIA.

II.[1]

Bengal.

THE fortieth annual report of the Sanitary Commissioner for Bengal for the year 1907 has been furnished by Lieutenant-Colonel F. C. Clarkson, I.M.S., the Sanitary Commissioner for Bengal. In it we find recorded remarks on the meteorology, vital statistics, chief diseases, vaccination in the Province, sanitary work, and the work of the Sanitary Board, with certain appendices. With respect to the meteorology, we learn that there was practically no rainfall in January in Lower Bengal, but that there were very heavy rainfalls during the next three months, that in Orissa being exceptionally heavy. In June although the south-west monsoon was actively established about the normal date yet it was restricted to a comparatively small area. The October rainfall was unfortunately defective in all districts, thus exercising a prejudicial influence on the winter rice crop.

With regard to the vital statistics, the number of births and deaths registered during 1907 amounted to 1,905,425 and 1,906,192, as compared with 1,885,725 and 1,823,243 respectively for 1906, the corresponding ratios being 37·70 and 37·72, and 37·32 and 36·08 per 1000 of population. The deaths were thus 82,949 and the births 19,700 in excess of those of 1906. The high price of food grains and the general unhealthiness of the year 1906 appear to have devitalised a large proportion of the people and checked the normal growth of the population. Compared with the other provinces, Bengal and Assam now come fourth and fifth. The experiment started in 1906 in the district of Burdwan for testing the registration of vital statistics in rural areas was continued throughout 1907. The usual inequality of births at different times of the year was very well marked, the registration at Murshidabad, for example, during June to September being very distinctly below the four months October to January, the only explanation which is apparent being that during the months of hard work in the fields there is a relative sterility which is compensated for by the opposite condition in the months after the harvest is gathered. With the single exception of fever the mortality from all the other causes was as usual higher in towns than in rural districts. Notwithstanding its filtered water-supply the cholera death-rate in Calcutta was only slightly smaller, probably due to the use of unfiltered Hooghly water for drinking and to flies settling on the food.

Coming now to the history of the chief diseases, we see that the mortality from cholera was unusually heavy, heavier even than that for 1906. In fact, 1907 was the blackest year on record except 1900, when the loss of life from this disease was the heaviest ever registered. There were 205,702 deaths as contrasted with 138,999, the average of the five years 1902–06, the corresponding ratios being 4·07 and 2·75 per 1000. This heavy mortality was probably due to the increasing pollution of the water-supply and the use of unwholesome things by the poorer classes in consequence of the abnormal rise in the price of foodstuffs. No district enjoyed complete immunity from it. Other causes noted for this large mortality were the use by the people of the beddings of cholera patients without proper cleansing, the throwing away of dead bodies instead of burying or burning them, thus contaminating the nearest water-supply, and eating unripe fruit. The wells were disinfected with permanganate of potassium with good result in a part of Burdwan and Midnapore only. Whenever this was properly carried out it was found that cholera was stopped in the locality. The people seem to be gradually beginning to appreciate the value of this measure.

Small-pox in 1907 maintained the upward tendency of the mortality noticed in 1906. The plague mortality went up, there having been 83,602 deaths, as against 59,619 of the preceding year; more females than males died. Captain Swanzy, R.A.M.C., who was in medical charge of the cases at Jalapahar, with his hospital assistant, compounder, and bhisti, fell victims to the disease. We are glad to note that anti-plague inoculation is gradually gaining in popularity, there having been 2766 inoculations, against 1777 in 1906 and 1544 in 1905. Among the inoculated one case of plague is reported to have occurred at Bhagalpur and one death at Champaran. The latter had almost certainly become infected before the operation. In Calcutta 3123 were inoculated, as against 101 in the previous year. No case of plague was known to have occurred amongst this number. Evacuation is the measure chiefly relied on, chemical disinfection having been practically given up. As a measure against fleas crude oil emulsion was used as a disinfectant. Much has been done also in educating the populace by means of pamphlets and instruction in plague prevention. Rat extermination was also carried out in many places of the province; 541,313 rats were killed in the Jagadispur circle of the Shahabad district. Fever prevailed with greater severity in 1907, 1,171,540 persons succumbing to it, as against 1,132,579 in 1906. Dysentery and diarrhœa showed also an increased number of deaths, giving a ratio of 1·02, as against 0·96 in 1906, the excess in mortality being probably due to the greater prevalence of cholera in 1907, the same causes contributing to both these classes of disease.

With reference to the sanitary work undertaken there was a very satisfactory increase in the expenditure under the important heads of sanitation—viz., conservancy, drainage, and water-supply. Much attention has, we are glad to observe, been paid to the latter with respect to filtration; attention has also been directed to the disposal of the night soil. Special care has been paid to the observance of sanitary

[1] No I. was published in THE LANCET of April 10th, 1909, p. 1067.

and medical precautions at all important fairs and festivals during 1907 with respect to the public and semi-public wells. Lieutenant-Colonel Clarkson is to be congratulated on the excellence of his report.

Central Provinces and Berar.

Lieutenant-Colonel A. M. Crofts, I.M.S., contributes the annual sanitary report for the Central Provinces and Berar for the year 1907. In these districts the climatic conditions were decidedly abnormal, there having been an unusual amount of rain in the cold and hot weather, a delayed and weak monsoon during June and part of July, very heavy rain during the rest of July and August, and drought during the last four months of the year. These conditions were in marked contrast to those of 1906, which was a decidedly unhealthy year, but they were not much conducive to better health except as regards the diminution of autumnal fever due to the early withdrawal of the rains. The mortality was 41·70 per 1000, and no year in which the mortality is as much as 40 per 1000 can be described as healthy. The birth-rate—52·46 per 1000—was again the highest in India, it only having been exceeded in 1905 and 1904 out of the last 25 years. The death-rate was 38·96 per 1000, but it is in reality not nearly so high as the official record shows when we consider the allowance that must be made for the influx of people attracted by the commercial development of the province and the return of emigrants who were temporarily absent at the census. The terrible waste of infant life, as a result of bad feeding, exposure and ignorant treatment, early marriage, and generally insanitary surroundings, must be looked for until education, and especially female education, is more widely diffused.

With respect to the chief diseases, the province suffered from two distinct epidemics of cholera, the first, a mild one, from January to June, being traced to the return of pilgrims from the Allahabad, Benares, and Puri fairs. The sources of infection in both epidemics probably were the fairs, the drying up of wells and tanks, and the consequent necessity of drawing water from jhirias sunk in the polluted beds of streams and nullahs, the spread of the disease being favoured by the gathering together of large parties in connexion with the marriage season. Small-pox showed, generally speaking, a decreased death-rate, but in Mandla this was not the case, which is put down to bad vaccination in the past few years. The exact prevalence of malaria was difficult to estimate, as there was reason to suspect that plague and many other diseases attended with febrile symptoms were registered under this heading; the incidence of these diseases as judged by dispensary statistics was lower than usual. The anti-malarial operations undertaken in the headquarters town of Betul were continued; it was not found possible to exterminate the mosquitoes, but their numbers are greatly reduced, as the natives are now finding out the danger of leaving stagnant water near their houses. Packets of quinine have been sold during 1907 in a more extended manner. With regard to diarrhœa and dysentery, there was a high mortality in Berar due to some extent to the consumption by the poorer classes of old damp and mildewed juari from earthen pits in which the grain is sometimes stored for years. The mortality from respiratory diseases was 1·24 per 1000 in excess of the preceding year, being at the rate of 2·64 per 1000; this may be partly due to the people living in temporary huts during the prevalence of plague, as they do not afford protection from the weather, and partly to better registration.

Coming now to plague, we find 37,774 deaths reported, more than half of which occurred in the Berar division. The special measures adopted for its prevention and spread continue to be inoculation, evacuation of infected areas, and destruction of rats. The prejudice against and suspicion of official methods of treatment have gradually become less widespread. Preventive measures are much more willingly undertaken in those places that have suffered severely in the past, in contrast to those districts that have not been so greatly attacked. Inoculation has not been so popular as was expected, but still a large number of operations were carried out chiefly through the tact and ability of Captain Morrison, I.M.S. There were 14,440 cases inoculated; the carrying out of this precaution is shown to have been much aided by the example and assistance afforded by the leading men of the district, Baboo Bakthanar Singh being especially praised in this direction. Such assistance, it is to be hoped, will be the rule in the future, as it is impossible for the overburdened civil surgeon in charge of large and populous civil districts to afford the time necessary to induce the people concerned to protect themselves by this method. It was found that the immunity period gained by inoculation was about two years. A wise endeavour is being made to check as far as possible the degree of immunity conferred, so as to place before the eyes of the people object-lessons in the persons of the inoculated who have escaped, whilst the uninoculated have succumbed. Lieutenant-Colonel Crofts wisely insists that inoculation, evacuation, and sanitation hold the chief places in prevention, and that while rat destruction is a valuable aid to these measures, it must not be considered superior to them. Lieutenant-Colonel Buchanan, I.M.S., is convinced that the most effective method, however, in this respect is to keep cats, and he states that where the percentage of cats in houses is large, there an epidemic will not occur.

With respect to snake-bites, 39 cases were brought to the various dispensaries, 24 of which were treated with Calmette's antivenene, of which 18 recovered and six died. Permanganate of potassium failed in cases which were subsequently treated with success with antivenene; it is successful where the echis is concerned, although apparently it is not so with the Bungarus cæruleus. Lastly, it may be noted that 209 cases of cancer were treated in the dispensaries. The report concludes with an account of the various sanitary works undertaken by the Public Works Department.

North-West Frontier Province.

Lieutenant-Colonel G. W. P. Dennys, I.M.S., in his report on the sanitary administration of the North-West Frontier Province for 1907, deals in like manner to the reports which we have been considering with all the sanitary details of the district under his charge. In this province there were 62,026 births registered in 1907, against 76,834 of the previous year, the latter being the highest on record since the formation of the province, the ratios per 1000 being 32·5 against 38·6 for the respective years. The decrease is attributed largely, if not entirely, to the severe malarial fevers, followed by the usual sequelæ, that occurred during the first three months of 1907. This not only reduced the proportion of child-bearing women but also impaired the fecundity of the remaining population. With the exception of Madras, the birth-rate of this province was the lowest in India. There was a marked preponderance of male over female births. With respect to the rate of mortality there was a decrease of 172 on that of 1906—namely, 67,017 in contrast with 67,149, the death-rate per 1000 being 35·1, against 33·7 in the previous year; the mean death-rate for the five previous years was 29·6. The first two months of the year showed a very heavy mortality, due to the severe malarial epidemic occurring in the autumn of 1906. The mortality also was heavy in November and December of 1907 owing to the unusually early and severe onset of cold weather, whilst the people were still suffering from the effects of autumnal fevers. As usual, the latter head the causes of death, the rate being 27·4 per 1000, against 26·1 of the previous year.

Plague, from which the province had been so long immune, at last crossed the Indus and became for the first time epidemic. The outbreak in Peshawar was traced, it is believed, to the importation of a rat dead from plague in a consignment of grain. A few days after this the shopkeeper noticed dead rats in his shop and later both he and his son died from the disease in another part of the town in which they resided. Cases next appeared in the immediate neighbourhood of the shop. The shopkeepers affected slept at night in various parts of the city and no doubt carried with them plague-infected fleas; then shortly afterwards a large number of rats dying from plague were observed and next a number of human cases were noted. The disease lasted from the beginning of April to the end of July, when it died out entirely. The death-rate in Peshawar from plague was at the rate of 89·2 per cent. owing to the disinclination of the people to report cases; the number was certainly larger than the plague returns showed. With respect to treatment, 534 persons were inoculated with excellent results; in only one case did the disease occur and this was contracted in a very mild form and a rapid recovery was make. The people showed no violent opposition to the operation, but with the abatement of the disease they reverted to a condition of apathy regarding it. Much credit

was due to the excellent work done by Captain E. C. Hepper, I.M.S., the special plague officer at Peshawar. The people were greatly excited by absurd rumours as to the poisoning of wells, resulting in a feeling of utter distrust often reaching to positive hatred of the English medical men. Captain Hepper's excellent tact and good temper gradually restored confidence in the measures that were undertaken.

Respecting other diseases, cholera gave 266 deaths during the year under report. A suspicious case of vomiting and purging occurred in the person of a stranger who came from down country to a village in the Kohat district. His clothes were washed in a nullah, and a few days afterwards several cases of the disease occurred in a village farther down the stream in which the water of this nullah was used for drinking purposes. The disease then spread to other villages of the province. Respiratory diseases gave the highest ratio recorded for many years, this being 0·99 per 1000, the mean death-rate of the previous five years being 0·52, the severe malaria and the early and severe winter being responsible for this. Small-pox gave 769 deaths in the province, as against 1127 of the previous year. In the city of Peshawar, which is one of the towns in the province where the Vaccination Act has not been brought into force, a death-rate of 0·80 per 1000 was recorded. The highest death-rate, 3·29, was given by the town of Buffa; this is very unsatisfactory, as the Vaccination Act was brought into force in this town in May, 1906, and the natural inference is that the provisions of the Act were not rigorously enforced. Dysentery and diarrhœa remained much the same as in previous years, as usual the ratio being highest in the Dera Ismail Khan district, where the drinking water is as a rule very bad.

This report of Lieutenant-Colonel Dennys, although somewhat short, the text being limited to eight pages, is a model of conciseness, and reflects the greatest credit on the well-established reputation of this officer.

MEDICINE AND THE LAW.

A Medical Man's Claim for Fees against an Ambassador.

ON March 31st, in the Marylebone county court, his honour Judge Sir William Selfe had before him a claim for £10 17*s.* 6*d.* made by Dr. A. S. Currie of Oxford-terrace, Hyde Park, the defendant being General E. M. Terán, now residing at Alexandra-terrace, West Hampstead, who did not appear. When this claim was called before the registrar the defendant set up the defence of immunity from process on the ground that he was Envoy and Minister Plenipotentiary to this country from the Republic of Ecuador. The defendant's letters of recall had since that time been issued, and a letter from the Foreign Office was read stating that such letters of recall had been received, and adding that after their date General Terán could not claim immunity from process on account of his diplomatic position. It was contended for the plaintiff, on the authority of the case of Musurus Bey, decided in 1894, that the immunity was unconditionally removed for any period. Dr. Currie gave evidence that he had attended the defendant's children at his residence at Hampstead in May and June, 1907, and his fees amounted to the sum claimed. The judge inquired why the action was not brought earlier. The plaintiff replied that the claim was made, but the plea of immunity was set up, and he therefore decided to await the expiry of that position before coming to court. His honour gave judgment for the amount claimed with costs. Ambassadors and Ministers of foreign States hold a somewhat curious position. It would be impossible for an envoy efficiently to discharge the duties of his mission if his liberty of action was restrained like that of any other sojourner by obedience to the local jurisdiction. In order, therefore, to secure a free and fearless discharge of diplomatic functions a consensus of nations has established the right of every envoy to enjoy for himself, his family, and his suite a certain exemption from such jurisdiction. While such privilege continues the envoy remains subject to the laws of his own State which govern his personal status and rights of property according to the fiction that although *de facto* resident in a foreign country he is *de jure* resident within the territory of his own. Such is the nature of the fiction of exterritoriality invented to give intensity to the idea that the envoy, his family, and his suite are exempt from all local control. The exemption, which is supposed to rest upon a tacit compact between the sending and receiving State, begins the moment the envoy enters the territory of the latter, and continues not only during his entire residence but until he loses his official character or leaves the country, even when prior to his departure war has broken out between his own State and that to which he is accredited. While the privilege continues it exempts the envoy, his hotel and moveable effects from the local jurisdiction, civil and criminal, and through him it is extended to those of his suite possessing a diplomatic character; and in a lesser degree to his wife, children, chaplain, private secretary, and servants, persons necessary to his comfort and convenience but not a part of the diplomatic corps of his country. An ambassador, having no real property in the country and having done nothing to disentitle him to the general privileges of his office, cannot, while he remains such ambassador, be sued in England against his will, although the suit may arise out of commercial transactions by him here, and although neither his person nor his goods are touched by the suit. But if the ambassador appears and submits to the jurisdiction the action can then be proceeded with.

Looking Back.

FROM

THE LANCET, *SATURDAY*, April 23rd, 1831.

SOCIETE DE PHARMACIE DE PARIS.

February 8th.

NEW METAL, VANADIUM.[1]

M. DULONG read a letter from M. Berzelius, announcing the discovery of this new metallic substance. M. Selstrom, director of the mining school at Fahlun, in the examination of a specimen of iron remarkable for its extreme softness, recognised in it the presence of a substance, the properties of which are different from those of all bodies hitherto described. The quantity contained in the specimen first examined was so small as to prevent a successful inquiry into its nature. The iron was brought from the mine of Taberg, in Smoland, and M. Selstrom having found that the smelting furnace contained a greater quantity of the new substance than the iron did, and that the scoriæ were still more richly impregnated with it, a sufficient quantity was procured and examined conjointly by M.M. Berzelius and Selstrom.

It is provisionally termed Vanadium, from Vanade, the name of a Scandinavian divinity. Vanadium forms with oxygen two compounds, an oxide and an acid. The acid is red, pulverulent, fusible, and crystalizable after fusion as it cools. It is slightly soluble in water, reddens turnsole, affords yellow neutral, and orange supersalts The acid and basic combinations which it forms, possess in solution the singular property of frequently becoming colourless in a moment, and they resume their colour when again solidified. Hydrogen gas reduces vanadic acid to a reddish-white colour, there remaining a coherent mass of a weak metallic splendour, and an excellent conductor of electricity. The vanadium thus obtained combines only with sulphur, when heated to redness in an atmosphere of the vapour of that substance. The oxide of vanadium is brown, nearly black, and dissolves readily in acids. Its salts are of a deep-brown colour, but by the addition of a little nitric acid, effervescence takes place, and the colour becomes a beautiful blue. Sulphuretted hydrogen, and even nitrous acid, reduce the vanadic acid when in combination with any other acid to this blue matter, which appears to be a

[1] It subsequently appeared that this substance was first found in a lead-mine at Zimapan, in Mexico, in the year 1801, by Del Rio, who announced it as a new metal under the name of erythronium; but the mineral having been examined by Collet Descotils, he asserted that erythronium was merely impure chromium. Del Rio himself adopted the opinion of the French chemist, and considered the mineral as a subchromate of lead. Sir Henry E. Roscoe, F.R.S., published his researches on vanadium in 1867-8. An annotation on the physiological action of vanadium appeared in THE LANCET of Jan. 15th, 1876, p. 104.

compound of the oxide of vanadium and vanadic acid analogous to the compounds formed by molybdenum, tungsten, iridium, and osmium. The acid and oxide of vanadium combine with each other, forming green, yellow, and red compounds, soluble in water, without the aid of any other acid.

The oxide of vanadium when obtained, *viâ humidâ*, is soluble in water and alkalies. The presence of a salt in the water entirely prevents the solution, and we thus obtain a mode of precipitating oxide of vanadium, by adding to its solutions any neutral salt.

The vanadates dissolved in water are decomposed by sulphuretted hydrogen, being transformed into sulphosalts of a beautiful red colour. The chloride of vanadium is a colourless liquid, exceedingly volatile, and producing a dense red vapour. The fluoride is sometimes colourless, sometimes red, but always fixed in the air. Before the blowpipe, vanadium colours the fluxes a beautiful green, like chrome.—*Journal de Pharmacie, Mars, 1831.*

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

Borough of Richmond.—Dr. J. H. Crocker devotes some space in his report to a consideration of the question as to whether intercepting traps between the sewer and the house should continue to be provided and whether their presence can be safely dispensed with. As is well known, there is considerable difference of opinion amongst sanitary engineers as to the value of these traps, those who disapprove of them holding that the frequency with which they become stopped up more than counterbalances any advantages which they possess. A number of these traps have been inspected in Richmond and a certain number of them showed evidence of having been recently stopped up, but in only one instance was the "cap" over the "raking" arm not in position. It appears to be generally conceded that in old properties, where the process of properly ventilating the sewers by the house drains would have to be gradual, there is considerable objection to the proposed alteration, as theoretically there would be accentuated stress put upon the ventilators which were placed in direct communication with the sewers. There is, too, the objection that in old properties the drains are frequently defective and that in cases where, as in town, the drains pass beneath the house the chances of the influx of sewer air would not be negligible. The problem is materially complicated by the fact that the sewer must be ventilated somehow and that this frequently necessitates the erection of a sewer ventilator on a house. But in these cases there is no chance of insuction of sewer air, as would undoubtedly be the case were each house drain ventilator also a sewer ventilator. Water-closets may become unsyphoned in so many ways and house drains so frequently become defective that many persons would hesitate before placing their house drains in direct communication with the sewer air. If an intercepting trap becomes obstructed and drain air enters the house the inhabitants are dealing only with such infections as they already possess, whereas, when there is no such trap they may be dealing with the common sewer air, which, as we now know, is capable under certain conditions of transmitting micro-organisms. It is obviously a very difficult matter to actually demonstrate the relative dangers associated with one or another system, but it is not improbable, having regard to the defects to which drains and sewers are liable under existing conditions of construction and want of supervision, that some medical officers of health would be unwilling to part with the trap which can be controlled and which will, if controlled, guard against invasion of micro-organisms from sewer air. Dr. Crocker thinks that in laying out new districts the intercepting trap might be dispensed with, provided, of course, that sewers and drains were practically perfect, but he does not think that the use of the traps can be dispensed with in existing properties. The question is under the consideration of the Local Government Board, and perhaps some pronouncement upon the subject may be anticipated.

County Borough of Southport.—Mr. John J. Weaver estimates the population of this important Lancashire health resort at 53,318, a number which is, we imagine, greatly augmented during the summer months. The birth-rate for 1908 was 16·84 per 1000, the death-rate (exclusive of visitors) 11·35 per 1000, and the infantile mortality 104 per 1000 registered births. The experience of Southport in the matter of "return" cases of scarlet fever is interesting so far as it goes. A discharging block was erected a few years ago and subsequently the number of "return" cases appeared to increase, and this increase, it is thought, may have been due to the setting up of catarrhal conditions due to the sudden change from artificially heated wards to the conditions of the average home. Consequently, endeavours have been made to render the change less sudden and the temperature of the final bath has been lowered, with the result, it is believed, of a diminished number of "return" cases. But these numbers are small and, as Mr. Weaver evidently feels, it is necessary to speak with caution on the subject. Still, up to two years ago, the "return" cases amounted to rather over 5 per cent. of the total, whereas since then they have been reduced to a little under 1 per cent. Mr. Weaver made a report to the education committee relative to the medical inspection of school children, in which he advised the appointment of an assistant medical officer of health who should perform the inspections, and of a nurse who should act both as regards school work and infantile mortality, but the council has apparently decided to keep the duties of the school officer distinct from those of the health department. New sewage works have recently been erected, consisting of sedimentation tanks and bacterial filters, the effluent passing out into the estuary of the Ribble. As regards the sewers themselves, the surface ventilators were closed some years ago and ventilation provided for by ventilating lamps. Coincidently with the adoption of this policy there has been a great diminution in the notifications and deaths from enteric fever. The analysis of certain foods in this district has yielded some rather striking results. In certain sausages boric acid to the extent of 38·2 grains per pound was found, while some potted shrimps, for which Southport is famous, contained 58·15 grains of boric acid per pound. One sample of "potted lobster" was found to contain no lobster, and another 27·7 grains of boric acid. Five samples of fish paste with lobster contained 56·44 and 43·4 grains of boric acid per pound respectively, and two samples of potted shrimp and salmon yielded respectively 63·3 and 67·7 grains per pound of boric acid. All these latter cases were dismissed!

Woodford Urban District.—The Notification of Births Act was adopted in this district only after considerable opposition at the hands both of the ratepayers and the medical profession, and a similar hostility appears to have been encountered at the appointment of a health visitor. But the health visitor obtained a better appointment after ten months' work in the district, and although Mr. W. G. Groves, the medical officer of health, reported that the results of her work and of the Notification of Births Act were satisfactory and promising, the district council when appointing another health visitor decided not to insist on early notification of births. The medical officer of health is naturally disappointed at this, as he regards the two provisions as largely interdependent. Mr. Groves states that in his view the effect of isolation hospitals in preventing the spread of infectious diseases has been less than was anticipated. This opinion appears to be becoming fairly general amongst medical officers of health. The medical inspection of school children in this district is carried out by medical officers appointed by the Essex county council.

Borough of Tunbridge Wells.—Mr. William Stamford reports that the town council has had under consideration the medical inspection of school children and has formed an elementary school medical department for the borough. This is to consist of the medical officer of health, three medical officers, and a nurse. The medical officer of health is to supervise generally and to report to the education committee and the Board of Education; the three medical officers are to conduct the correspondence, to examine the children, and to prepare returns for transmission to the medical officer of health; while the nurse is to attend on the medical officers, to follow up cases where necessary, and generally to carry out the instructions of the medical officers.

Borough of Guildford.—There was an outbreak of scarlet fever in this town in January, 1908, which was believed by

Dr. R. W. C. Pierce to have been probably caused by a girl, daughter of a cowman, having indirectly infected the milk-supply. This girl had been isolated in a fever hospital in another part of the country while suffering from diphtheria, and during her stay at the hospital she developed a rash which was ascribed to antitoxin, but which may, it seems, have been a scarlet fever eruption. It is possible, however, that the milk may have been infected by another man in contact with the milk, one of whose children had suffered from illness with a rash some three weeks previously. The fact has also to be mentioned that one of the cows had an eruption on its teats. On excluding both the men in question, as also the milk of the affected cow, the milk at once ceased to spread disease. There were seven instances of "return" cases of scarlet fever during the year under notice, and nearly all were associated either with recurrent nasal discharge or enlarged tonsils and adenoids. One child had been in hospital nearly 19 weeks. In 1906 18 cottages were built by the council and all of them were occupied throughout 1908 at rentals of 6*s*. 6*d*. and 7*s*. 6*d*. per week. The question of adopting the Notification of Births Act was considered by the council, but having regard to the low infantile mortality rate (73 per 1000 births) it was not thought desirable to incur the expense. Moreover, the Guildford division of the British Medical Association objected to the adoption of the Act owing to there being no fee attached to notification.

THE MEDICAL INSPECTION OF SCHOOL CHILDREN: ANNUAL REPORTS OF MEDICAL OFFICERS.

Berkshire Education Committee.—Dr. Gerard C. Taylor, who is county medical officer of health as well as school medical officer, in presenting his first annual report in his latter capacity, states that as regards school closure in outbreaks of measles or whooping-cough the usual practice has been to close an infant department when either of the diseases is prevalent in the neighbourhood and the attendance has already been seriously affected; but he expresses a doubt whether, in view of the opportunities for infection outside the school, closure even at an early stage of an epidemic is of much benefit in checking the spread of the malady. With respect to the sanitary condition of schools, Dr. Taylor reports that when no sewers are available earth-closets are being gradually substituted for privy-pits and cesspools, the pail contents being buried daily in shallow trenches and the waste water collected in a small tank, from which it is pumped each evening and disposed of by surface irrigation. The total population of the administrative county is estimated at about 141,300 and the number of school children at 24,500. Unless children are practically five years old they are not admitted to school. The schools of the county have for purposes of inspection been divided into two groups, one group being assigned to each of the two assistant medical officers. There are as yet no school nurses, and their absence is felt administratively. 3144 children have been examined and of these 12·7 per cent. were reported to be free from disease or defect, while it was found necessary to give directions to the parents or guardians of 84 per cent. of the children examined. 2 per cent. were found to be insufficiently clothed, pediculi or nits were found in the hair of 22 per cent., and 55 per cent. had defective teeth. As regards defective teeth, it is reported that an altruistic dental surgeon at Abingdon has offered to treat gratuitously cases sent to him by the parents. Here there is one of the great problems of medical treatment already solved from a local standpoint, but is it a satisfactory solution? 23 per cent. of the children had enlarged tonsils and 21 per cent. presented adenoid growths. Of 2241 children whose vision was tested, 73·9 per cent. were normal as regards both eyes. 25 children were mentally defective, and use has been made of the Defective and Epileptic Children Act, which has been adopted in the county. Very few cases of lung disease were found. There were one case of pulmonary tuberculosis and 51 instances of enlarged thyroid.

East Suffolk Education Committee.—Dr. George I. T. Stewart, in describing the method of inspection adopted, reports that the mouths and throats of the children are examined by means of a gardener's wooden label five inches long, one label being used for each child. The presence or absence of adenoids in the naso-pharynx is estimated by the general condition of the child as to the shape of the mouth and chest, the condition of the tonsils, and the frequency of bronchitic attacks, digital examination for the presence of these growths being made only in difficult cases and with the consent of the parents. This is probably a wise precaution at the first examination, as any infliction of pain upon the children would be likely to lead to a loss of confidence and perhaps opposition to inspection. Dr. Stewart has, for instance, found that the information obtained is greater when the inspection is conducted with several children present in the room, as in this fashion the children see that no pain is inflicted. Actual objection to medical inspection is evinced, the report states, by two classes. In the first place, there are the comparatively well-to-do parents who resent official interference on the ground that they have a medical attendant of their own; in the second place, there are the parents of neglected children who dread what medical inspection may reveal. There have been 4222 children examined. In 120 cases nutrition was below normal; in 21 per cent. there were pediculi. In 2605 cases there was dental caries and in 1537 there were enlarged tonsils or adenoids. Operations for these defects are, Dr. Stewart reports, rare owing to the belief that the children will "grow out" of the defects, and he states that children attend school irregularly more frequently from constantly recurring attacks of tonsillitis and bronchitis than from any other cause. Enlarged thyroid was found in 10 cases and defective hearing in 178 cases. There was some defect of speech in 48 cases, and in 43 additional instances defect of speech was found to be due to deficient use of the muscles of the lip, cheeks, and tongue, leading to slovenly partial guttural utterance. In many cases where the children showed indistinctness of articulation it was found that the mother owing to oral sepsis, lack of teeth, or a badly fitting plate was the cause of the child's defects by unconscious mimicry. Of 150 children examined as to their mental condition it was found that a third would improve more rapidly if instructed at a special school where manual training forms an essential element in teaching, and Dr. Stewart thinks that it would be well to provide for them a forest or garden colony. Chronic bronchitis has been found to affect school attendances very largely, and frequent attacks of this malady lead to a belief that the child is "consumptive." But Dr. Stewart found no signs of tubercle in any of these cases which were examined.

Borough of Guildford Education Authority.—Dr. R. W. C. Pierce, whose report as medical officer of health of this borough is dealt with in another column, reports that as the air in several of the schools produces the impression of "stuffiness" to one entering from the fresh air, he proposes to estimate the amount of carbonic acid gas as a means of ascertaining the impurities, and he finds that many of the class-rooms have permanent means of ventilation on one side only. He has advised that all the Tobin's tubes should be periodically cleansed. The lighting in several of the schools is defective, and arrangements for drying the cloaks and coats of the children are found in a few schools only. (We wonder whether such provisions are to be found in many of the schools for the richer classes.) The actual medical inspection of the children is carried out by a medical inspector, who reports direct to the school medical officer, Dr. Pierce; no school nurse has yet been appointed. No treatment has been undertaken by the education committee, and the services of the usual medical adviser or attendance at the county hospital has apparently sufficed, except in the case of ringworm and skin diseases, for which affections it is the practice of the parents to seek relief from the druggists or to use some domestic nostrum which is valueless. Clearly the appointment of a school nurse is called for.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8524 births and 5397 deaths were registered during the week ending April 17th. The annual rate of mortality in these towns, which had declined from 22·1 to 17·0 per 1000 in the five preceding weeks, rose again to 17·1 in the week under notice. During the 13 weeks of last quarter the death-rate averaged 18·8 per 1000, while in London during the same period the

mean rate was 19·6. The lowest recorded annual death-rates in these towns last week were 8·3 in King's Norton, 8·9 in Leyton, 10·4 in Hornsey, and 10·7 in Willesden; the rates in the other towns ranged upwards to 23·3 in Oldham, 24·8 in Bootle, 27·1 in Tynemouth, and 28·3 in Great Yarmouth. In London the recorded death-rate during the same week was equal to 17·3 per 1000. The 5397 deaths from all causes in the 76 towns last week showed an increase of 33 over the number in the preceding week, and included 584 which were referred to the principal epidemic diseases, against 573 and 593 in the two preceding weeks; of these 584 deaths, 321 resulted from measles, 130 from whooping-cough, 47 from diphtheria, 40 from diarrhœa, 31 from scarlet fever, and 15 from "fever" (principally enteric), but not any from small-pox. The 584 deaths from these epidemic diseases in the week under notice were equal to an annual rate of 1·9 per 1000, against 1·8 and 1·9 in the two preceding weeks; in London the recorded rate from these diseases was equal to 2·1 per 1000. No death from any of these epidemic diseases was registered last week in Gateshead, Birkenhead, Halifax, Northampton, Huddersfield, or in eight other smaller towns; the annual death-rates therefrom ranged upwards, however, in the other towns to 3·7 in Smethwick, 5·3 in Bootle, 6·5 in Warrington, and 6·6 in St. Helens. The fatal cases of measles in the 76 towns, which had declined from 438 to 327 in the four preceding weeks, further fell to 321 in the week under notice, but caused death-rates ranging upwards to 3·0 in Sheffield, 3·6 in Warrington, 3·7 in Smethwick, 5·3 in Bootle, and 6·0 in St. Helens. The deaths from whooping-cough, which had been 103 and 107 in the two preceding weeks, further rose last week to 130 and exceeded the number in any previous week of the year; the highest death-rates from this disease in the week under notice were 1·3 in Croydon, 2·6 in Preston, and 2·9 in Grimsby. The 47 fatal cases of diphtheria showed a decline from recent weekly numbers, and included 16 in London and its suburban districts, five in Manchester, three in Rhondda, and two each in Southampton and Stockport. The 40 deaths from diarrhœa slightly exceeded the number in the previous week, and caused death-rates to 1·2 in Aston Manor and 1·5 in Burnley. The fatal cases of scarlet fever, which had been 41 and 47 in the two preceding weeks, declined again to 31 in the week under notice, the highest death-rates from this cause being 1·4 in Warrington. The 15 deaths referred to "fever" showed a decline of seven from the number in the preceding week, and included three each in London and in Liverpool, and two each in Southampton and in Manchester. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had declined from 2873 to 2418 at the end of the six preceding weeks, had further decreased to 2294 on Saturday, April 17th; 244 new cases were admitted during the week, against 327, 273, and 256 in the three preceding weeks. The registered deaths in London referred to pneumonia and other diseases of the respiratory organs, which had decreased from 758 to 310 in the five preceding weeks, rose again to 341 in the week under notice, and exceeded by 16 the corrected average number in the corresponding week of the five years 1904–08. The deaths in London directly referred to influenza, which had been 137, 108, and 62 in the three preceding weeks, further fell to 43, but were 16 above the corrected average number. The causes of 52, or 1·0 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Newcastle-on-Tyne, Hull, Nottingham, Leicester, Salford, and in 47 other smaller towns; the 52 uncertified deaths included 11 in Birmingham, 11 in Liverpool, and four in Manchester.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had declined from 21·6 to 17·7 per 1000 in the five preceding weeks, rose again to 18·4 in the week ending April 17th. During the 13 weeks of last quarter the annual death-rate in these eight towns averaged 19·5 per 1000, and exceeded by 0·7 per 1000 the rate during the same period in the 76 large English towns. Among the eight Scotch towns the death-rates in the week under notice ranged from 8·5 in Leith and 17·5 in Aberdeen to 19·4 in Dundee and 22·0 in Perth. The 656 deaths from all causes registered in the eight towns last week showed an increase of 22 over the number in the preceding week, and included 98 which were referred to the principal epidemic diseases, against 78 and 90 in the two preceding weeks; of these 98 deaths, 58 resulted from whooping-cough, 18 from diarrhœa, seven from diphtheria, six from scarlet fever, five from measles, and four from enteric fever, but not any from small-pox. These 98 deaths from epidemic diseases were equal to an annual rate of 2·7 per 1000, which was 0·8 per 1000 above the mean rate during the same week from these diseases in the 76 English towns. The fatal cases of whooping-cough in the eight Scotch towns, which had been 47 and 55 in the two preceding weeks, further rose to 58 in the week under notice, and included 44 in Glasgow, five in Edinburgh, four in Greenock, two in Paisley, and two in Perth. The deaths from diarrhœa, which had been 14 and 13 in the two preceding weeks, rose again last week to 18, of which 11 occurred in Glasgow and five in Aberdeen. The fatal cases of diphtheria, which had been six and nine in the two previous weeks, declined again to seven last week, and included four in Glasgow and two in Paisley. The deaths from scarlet fever, which had declined from six to three in the four preceding weeks, rose again to six in the week under notice, and included four in Glasgow. The five fatal cases of measles exceeded the numbers in other recent weeks, and included four in Paisley. The four deaths from enteric fever corresponded with the number in the previous week and were all registered in Glasgow. The deaths referred to diseases of the respiratory organs in the eight towns, which had declined from 187 to 108 in the four preceding weeks, rose again to 135 in the week under notice, and were 14 in excess of the number in the corresponding period of last year. The causes of 16, or 2·4 per cent., of the deaths registered in the eight towns last week were not certified; in the 76 English towns the proportion of uncertified causes of death last week did not exceed 1·0 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had declined from 29·3 to 25·5 per 1000 in the four preceding weeks, rose again to 27·7 in the week ending April 17th. During the 13 weeks of last quarter the death-rate averaged 25·7 per 1000, whereas the mean rate during the same period did not exceed 19·6 in London and 18·1 in Edinburgh. The 212 deaths of Dublin residents from all causes during the week under notice exceeded by 17 the number in the preceding week, and included 21 which were referred to the principal epidemic diseases, against 20 and 17 in the two preceding weeks. These 21 deaths were equal to an annual rate of 2·7 per 1000, the rate from the epidemic diseases during the same week being 2·1 in London and 0·9 in Edinburgh. Of the 21 deaths from these epidemic diseases in Dublin last week, 11 resulted from whooping-cough, five from measles, two from diarrhœa, and one each from scarlet fever, diphtheria, and "fever," but not any from small-pox; the deaths from whooping-cough exceeded the number in any previous week of the year, while those from measles showed a slight decline from recent weekly numbers. The 212 deaths registered during the week included 37 of infants under one year of age and 60 of persons aged upwards of 60 years, these numbers being respectively two below and eight above the corresponding numbers in the previous week. Six inquest cases and four deaths from violence were registered; and 72, or 34·0 per cent., of the deaths occurred in public institutions. The causes of five, or 2·4 per cent., of the deaths in Dublin last week were not certified either by a registered medical practitioner or by a coroner; in London all but two of the 1606 deaths were duly certified, while in Edinburgh the causes of 2·5 per cent. of the deaths were uncertified.

VITAL STATISTICS OF LONDON DURING MARCH, 1909

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING MARCH, 1909

(Specially compiled for THE LANCET.)

Cities and Boroughs.	Estimated population in the middle of 1909.	Notified Cases of Infectious Disease.											Deaths from Principal Infectious Diseases.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	**4,833,938**	**5**	**1496**	**722**	**1**	**95**	**2**	**23**	**381**	**24**	**2749**	**5·9**	**1**	**533**	**40**	**85**	**198**	—	**17**	—	**59**	**933**	**2·0**	**9919**	**21·4**	**120**
West Districts.																										
Paddington	151,855	—	51	14	—	1	—	—	8	1	75	5·1	—	3	1	—	7	—	—	—	1	12	0·8	312	21·4	129
Kensington	183,683	—	30	20	—	6	—	1	9	—	66	3·7	—	15	1	6	5	—	1	—	1	29	1·6	394	22·4	125
Hammersmith	125,704	—	27	15	—	1	—	—	7	—	50	4·1	—	4	1	3	7	—	1	—	1	17	1·4	274	22·7	132
Fulham	176,406	—	28	46	—	3	—	3	12	1	93	5·5	—	9	1	7	10	—	—	—	2	29	1·7	280	16·6	115
Chelsea	75,249	—	31	9	—	2	—	1	3	—	46	6·4	—	10	1	3	3	—	—	—	—	17	2·4	187	25·9	115
City of Westminster	168,883	1	43	27	—	3	—	—	8	—	82	5·1	1	4	1	—	3	—	1	—	1	11	0·7	322	19·9	112
North Districts.																										
St. Marylebone	126,027	—	25	13	—	4	—	—	11	2	55	4·6	—	13	1	2	3	—	—	—	1	20	1·7	283	23·4	82
Hampstead	94,185	—	28	4	—	—	—	—	3	1	36	4·0	—	2	—	1	4	—	—	—	—	7	0·8	107	11·8	97
St. Pancras	237,422	—	75	33	—	4	—	3	14	—	129	5·7	—	42	3	7	4	—	1	—	5	62	2·7	506	22·2	128
Islington	351,202	—	96	54	—	15	—	3	25	2	195	5·8	—	54	3	5	18	—	3	—	3	86	2·6	781	23·2	137
Stoke Newington	54,423	—	23	2	—	2	—	2	2	—	31	5·9	—	5	2	—	4	—	1	—	—	12	2·3	96	18·4	87
Hackney	237,601	1	62	35	—	6	—	1	23	—	128	5·6	—	10	1	3	10	—	—	—	—	24	1·1	410	18·0	96
Central Districts.																										
Holborn	53,802	1	7	3		3	—	—	1	—	15	2·9	—	2	—	—	—	—	1	—	—	3	0·6	117	22·7	76
Finsbury	96,289	—	34	11	—	—	—	1	9	1	56	6·1	—	7	—	—	7	—	—	—	1	15	1·6	266	29·1	129
City of London	18,193	—	6	3	—	—	—	—	—	—	8	4·6	—	1	—	—	1	—	—	—	—	2	1·1	51	29·2	91
East Districts.																										
Shoreditch	114,802	—	35	21	—	3	—	1	10	1	71	6·4	—	18	1	4	16	—	—	—	4	43	3·9	313	28·4	127
Bethnal Green	131,316	—	31	20	—	5	1	—	14	2	73	5·8	—	13	3	—	6	—	—	—	2	24	1·9	285	22·6	107
Stepney	312,525	—	129	66	1	3	—	—	31	1	231	7·7	—	24	6	8	6	—	—	—	7	51	1·7	697	20·3	115
Poplar	171,965	—	63	24	—	3	—	1	15	2	108	6·5	—	22	3	1	8	—	—	—	6	40	2·4	373	22·6	168
South Districts.																										
Southwark	211,125	1	41	40	—	6	—	—	27	4	119	5·9	—	35	1	5	3	—	1	—	6	51	2·5	513	25·3	150
Bermondsey	127,569	—	35	12	—	3	—	1	24	—	75	6·1	—	69	—	—	8	—	2	—	1	80	6·5	346	28·3	160
Lambeth	324,188	—	71	43	—	4	—	2	16	4	140	4·5	—	22	3	9	21	—	2	—	2	59	1·9	732	23·5	116
Battersea	186,036	—	66	27	—	2	—	2	16	—	113	6·3	—	21	1	5	15	—	1	—	1	44	2·5	344	19·3	146
Wandsworth	297,646	—	92	46	—	9	—	—	21	1	169	5·9	—	47	2	6	16	—	—	—	4	75	2·6	595	20·8	107
Camberwell	283,022	—	91	44	—	2	—	1	26	1	165	6·1	—	35	2	3	6	—	—	—	2	48	1·8	587	21·6	121
Deptford	118,583	—	30	22	—	3	—	—	18	—	73	6·4	—	18	—	3	3	—	1	—	—	25	2·2	229	20·1	104
Greenwich	111,014	—	36	16	—	—	—	—	9	—	61	5·7	—	7	—	—	1	—	—	—	2	10	0·9	174	16·3	129
Lewisham	160,749	1	34	23	—	1	—	—	9	—	118	7·7	—	3	1	—	3	—	1	—	4	12	0·8	219	14·2	79
Woolwich	133,374	—	127	29	—	—	—	—	10	—	166	13·0	—	18	1	4	—	—	—	—	2	26	2·0	217	17·0	84
Port of London	—	—	—	—	—	1	1	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 5·9 per 1000 of the population, estimated at 4,833,938 persons in the middle of the year; in the three preceding months the rates were 7·6, 7·2, and 6·4 per 1000 respectively. The lowest rates last month were recorded in Kensington, Hammersmith, Hampstead, Holborn, and Lambeth; and the highest rates in Chelsea, Shoreditch, Stepney, Poplar, Deptford, Lewisham, and Woolwich. The five cases of small-pox exceeded the numbers notified in other recent months and belonged respectively to the City of Westminster, Hampstead, Holborn, Southwark, and Lewisham. Scarlet fever continued to show a declining prevalence last month; among the various metropolitan boroughs this disease was proportionally most prevalent in Chelsea, Stoke Newington, Stepney, Lewisham, and Woolwich. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 3498, 3147, and 2766 at the end of the three preceding months, had further declined to 2412 at the end of last month; the weekly admissions averaged 278, against 371, 343, and 283 in the three preceding months. Diphtheria was slightly less prevalent during March than in either of the two preceding months; the greatest proportional prevalence of this disease was recorded in Fulham, Shoreditch, Stepney, Southwark, Deptford, and Woolwich. The Metropolitan Asylums Hospitals contained 1103 diphtheria patients at the end of last month, against 953, 1182, and 1152 at the end of the three preceding months; the weekly admissions averaged 121, against 143, 136, and 133 in the three preceding months. Enteric fever was again less prevalent than in other recent months; the greatest proportional prevalence of this disease last month was recorded in Kensington, St. Marylebone, Islington, Stoke Newington, Holborn, Bethnal Green, and Wandsworth. The Metropolitan Asylums Hospitals contained 87 enteric fever patients at the end of last month, against 147, 126, and 124 at the end of the three preceding months; the weekly admissions averaged nine, against 16, 18, and 17 in the three preceding months. Erysipelas was proportionally most prevalent in Hackney, Finsbury, Bethnal Green, Stepney, Southwark, and Bermondsey. The 23 cases of puerperal fever notified during the month included three each in Fulham, St. Pancras, and Islington, and two each in Stoke Newington, Lambeth, and Battersea. The 24 cases notified as cerebro-spinal meningitis included four each in Southwark and Lambeth, and two each in St. Marylebone, Islington, Bethnal Green, and Poplar.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the five weeks ending April 3rd the deaths of 9919 persons belonging to London were registered, equal to an annual rate of 21·4 per 1000; in the three preceding months the rates were 14·3, 16·4, and 18·5 respectively. The death-rates last month ranged from 11·8 in Hampstead, 14·2 in Lewisham, 16·3 in Greenwich, 16·6 in Fulham, 17·0 in Woolwich, and 18·0 in Hackney, to 25·3 in Southwark, 25·9 in Chelsea, 28·3 in Bermondsey, 28·4 in Shoreditch, 29·1 in Finsbury, and 29·2 in the City of London. The 9919 deaths from all causes included 933 which were referred to the principal infectious diseases; of these, one resulted from small-pox, 533 from measles, 40 from scarlet fever, 85 from diphtheria, 198 from whooping-cough, 17 from enteric fever and 59 from diarrhœa, but not any from typhus fever or from ill-defined pyrexia. The lowest death-rates from these diseases were recorded last month in Paddington, the City of Westminster, Hampstead, Holborn, Greenwich, and Lewisham; and the highest rates in St. Pancras, Islington, Shoreditch, Southwark, Bermondsey, Battersea, and Wandsworth. The 533 fatal cases of measles were as many as 293 above the corrected average number for the corresponding period of the five preceding years; the greatest proportional mortality from this disease last month occurred in St. Pancras, Islington, Shoreditch, Southwark, Bermondsey, and Wandsworth. The 40 deaths from scarlet fever were four fewer than the corrected average; of these 40 deaths, six occurred in Stepney, and three each in St. Pancras, Islington, Bethnal Green, Poplar, and Lambeth. The 85 fatal cases of diphtheria exceeded the corrected average number by ten; the highest death-rates from this disease last month were recorded in Kensington, Fulham, Chelsea, St. Pancras, Shoreditch, and Woolwich. The 198 deaths from whooping-cough were 18 below the corrected average number for the corresponding period of the five preceding years; the greatest proportional mortality from this disease occurred in Stoke Newington, Finsbury, Shoreditch, Bermondsey, Lambeth, and Battersea. The 17 fatal cases of enteric fever were equal to the corrected average number; these 17 deaths included three in Islington, two in Bermondsey, and two in Lambeth. The 59 deaths from diarrhœa showed a decline of 12 from the corrected average number; this disease was proportionally most fatal in St. Pancras, Shoreditch, Stepney, Poplar, Southwark, and Lewisham. The fatal case of small-pox belonged to the City of Westminster. In conclusion, it may be stated that the aggregate mortality in London last month from these principal infectious diseases was 40 per cent. above the average.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 120 per 1000. The lowest rates of infant mortality were recorded in St. Marylebone, Stoke Newington, Holborn, the City of London, Lewisham, and Woolwich; and the highest rates in Hammersmith, Islington, Poplar, Southwark, Bermondsey, and Battersea.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeons: G. T. Collingwood to the *Racer*, additional, for Royal Naval College, Osborne; J. Sugrue to the *President*, additional, for Royal Marines, Recruiting Headquarters; J. Lloyd-Thomas to the *Eagle;* W. E. Home to the *Dædalus;* P. M. Maye to the *Vengeance* and to the *Trafalgar*, on becoming parent ship; C. J. Mansfield to the *Formidable*, on commissioning. Staff-Surgeons: E. Folliott to the *Forte;* C. B. Fairbank to the *Victorious*, on recommissioning; E. T. Burton to the *Egmont*, additional, for Malta Dockyard; and W. K. Hopkins to the *Talbot*, on recommissioning. Surgeons: E. R. L. Thomas to the *Crescent*, additional, for the *Edgar*, temporarily; G. D. Bateman to the *Formidable*, on commissioning; G. A Bradshaw to the *Hindustan;* R. Kennedy to the *Forte*, on completing; and L. M. Morris to the *Bienheim*, temporarily.

ROYAL ARMY MEDICAL CORPS.

Surgeon-Major Samuel G. Moores, from the Scots Guards, to be Major (dated April 17th, 1909).

Lieutenant-Colonel R. I. D. Hackett and Lieutenant-Colonel H. I. Barrett will exchange positions on the foreign service roster. Captain J. B. Meldon, from Bangalore, has been appointed to the Dublin District. Major C. C. Fleming, D.S.O., will take up the appointment of instructor at the Royal Army Medical Corps School, Aldershot, in June, *vice* Major J. D. Ferguson, D.S.O.

TERRITORIAL FORCE.

Royal Army Medical Corps.

2nd Northern General Hospital: Surgeon-Captain Arthur Longley Whitehead, from the 1st West Riding Brigade Royal Field Artillery, to be Captain and to be an officer whose services will be available on mobilisation, retaining his seniority as in the Royal Field Artillery, Territorial Force (dated Feb. 25th, 1909).

For attachment to Units other than Medical Units.—Major John W. Ellis to be Lieutenant-Colonel (dated June 15th, 1908). Thomas Hillhouse Livingstone to be Lieutenant (dated March 1st, 1909). Cecil Johnson to be Lieutenant (dated March 23rd, 1909.

THE ALEXANDER MEMORIAL PRIZE.

The Alexander Memorial Prize, consisting of £50 and a gold medal, is awarded every third year to the writer of the best essay on a subject connected with military medicine, surgery, or hygiene. The competition is open to executive officers of the Royal Army Medical Corps on full pay, with the exception of the professors and assistant professors of the Royal Army Medical College during their period of office. No prize has been awarded for the triennial period ending Dec. 31st, 1908. The subject for the next prize essay is the following: "Tropical Abscess of the Liver." The subject may be treated either from a clinical or an

etiological standpoint and the essay must bear evidence of original observations. No essays should exceed 20,000 words, exclusive of tables, which may be added as appendices. Essays should be sent in to the secretary of the Prizes Committee, Royal Army Medical College, on or before Dec. 31st, 1911. Each essay is to have a motto and to be accompanied by a sealed envelope bearing the same motto and containing the name of the competitor.

SANITARY SERVICE (R.A.M.C.) DINNER.

The officers of the Sanitary Service of the Royal Army Medical Corps will dine at the Hôtel Métropole on Saturday, May 8th. The Right Hon. R. B. Haldane, M.P., Secretary of State for War; General Sir W. G. Nicholson, Chief of the General Staff: Surgeon-General Sir A. H. Keogh, Director-General, A.M.S.; and Lieutenant-General Sir W. H. Mackinnon, Director-General of the Territorial Forces, are the guests.

THE NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund held on April 20th, Sir C. J. Thomas, K.C.B., in the chair, the sum of £55 was distributed among the several applicants.

Correspondence.

"Audi alteram partem."

AN AMBULANCE SERVICE FOR THE METROPOLIS.

To the Editor of THE LANCET.

SIR,—May I be permitted, as having had some considerable acquaintance with this subject, to endorse the plea in your leading article that to medical men the great thing at present is action by the Home Office in some direction. During 21 years' service as one of the divisional surgeons to the Metropolitan Police I had ample opportunities of seeing the need for such a service, having been obliged, sometimes at night, to send patients with broken limbs three or four miles to Guy's or St. Thomas's Hospitals in a four-wheeler—not exactly an ideal conveyance for a suffering patient.

Personally I must confess that I am unable to see how the coöperation of either the Metropolitan Asylums Board or the London County Council is essential. All the Metropolitan force as they join the ranks are now, I am informed, trained to render first aid, and on the occurrence of illness or accident in the streets they are authorised and directed to call in the nearest medical man to their aid if the divisional surgeon should be too far off. Liverpool has for a number of years had an admirable ambulance service organised by the police alone, and in recent years Captain Nott-Bower, who had experience of the Liverpool system before he was appointed Commissioner of the City of London Police, has got a similar service into working order there. What Liverpool and the City have done, Scotland Yard might surely be trusted to do with two such excellent models before it if only the Home Office would authorise the purchase of ambulances.

I am, Sir, yours faithfully,

H. NELSON HARDY,
President, United Kingdom Police Surgeons' Association.

London, April 19th, 1909.

THE ETIOLOGY OF ACNE.

To the Editor of THE LANCET.

SIR,—May I trespass upon your space for some remarks on Dr. A. Fleming's valuable paper on the etiology of acne in your issue of April 10th? Dr. Fleming's contention that the micro-bacillus is the cause not only of the comedo but of the suppuration of acne is based on the following reasons: (1) it is constantly present in the films made from the pus; (2) it is frequently the only organism present in the pus; (3) it can frequently be recovered from the pus in pure culture; (4) inoculated into a susceptible individual it produced a pustular folliculitis, and examination of the pus showed no other organisms to be present; (5) inoculated into animals it produces an abscess from which the bacillus has been recovered in pure culture (Gilchrist); (6) the serum of patients affected with acne agglutinates the bacillus in some cases; (7) the opsonic indices of patients to the acne bacillus vary considerably from the normal; (8) large doses of a vaccine made from the acne bacillus induce a marked negative phase characterised by the appearance of fresh pustules from which the organism has been recovered in pure culture; (9) a vaccine of this organism has a marked beneficial effect on the condition; and (10) when a patient has a high opsonic index to the bacillus his condition improves, but when the opsonic index is low fresh pustules appear.

Now these results appear at first sight to be sufficient proof of the causal relationship of the bacillus to the suppuration of acne, but careful consideration will, I think, throw some doubt upon this conclusion. I may begin by quoting again a valuable principle laid down by Sabouraud—namely, that where an organism is found in luxuriant growth in the skin, that organism is producing its noxious effects, if any. I think it is sufficiently obvious that we must either admit the validity of this statement or throw overboard bacteriology in pathological research. Now it is admitted by all that if we examine the comedo in its *non-inflamed* state we find the micro-bacillus present in the most luxuriant growth. I have never examined a comedo without finding this (putting aside the grouped comedo of infants), and I have therefore agreed with Sabouraud that the micro-bacillus is the cause of the comedo. Acting as a mild irritant to the neck of the follicle it causes repeated attempts to be made by the epithelium to encyst it with the resultant characteristic onion-like formation. So far I think Dr. Fleming will agree with me.

Now as regards the suppuration it might be contended that only in certain persons is the micro-bacillus a pyogenic organism, but this is not the correct explanation for the following reason. If we take comedones surrounded by *no* inflammatory or pustular reaction from patients the subject of pustular acne we find this abundant growth of the micro-bacillus present in the non-inflamed comedo. So that we are driven, if we accept the pyogenic nature of the micro-bacillus, to say not that it is pyogenic in some persons, but that it is pyogenic in some lesions.

Years ago when working at this subject I examined a very large number of acne lesions both by the film method and by sections, and I came to the conclusions expressed in my book and quoted by Dr. Fleming. I have also examined for some years the pus from all private cases of acne and have only on very few occasions failed to demonstrate the staphylococcus in films. Recently I had a case in which I found no staphylococci present in films, but on excising a pustule I found them present in colonies near the wall of the little abscess. By cutting horizontal sections in this case I was able to demonstrate in one section two follicles so close together that both could be seen in one field of a one-inch objective, one suppurating with a central comedo and micro-bacilli and staphylococci in the pus when viewed with a high power, the other without the slightest leucocytic or other inflammatory reaction yet stuffed with micro-bacilli.

Turning now to Dr. Fleming's reasons, Numbers 1, 6, 7, 8, 9, 10 agree equally well with the bacillus as a cause of comedo. As regards 8, the causation of pustulation by the injection of bacillary vaccine, I have turned an ordinary microsporon ringworm of the scalp into a kerion on more than one occasion by the injection of ringworm vaccine, and am inclined to think that there is a future for this as a method of cure. Statement number two, that the bacillus is frequently the only organism present in the pus, I am convinced from an extremely extensive experience is inaccurate. The position of the staphylococci in the pus nearest the wall may account for the cultivation of the bacillus in pure culture on some occasions, and it is to be remembered that the suppuration is very indolent as a rule and that there are comparatively few staphylococci present. In the more actively suppurating lesions staphylococci are much more numerous. As regards animal experiment (No. 5), it is probable that Gilchrist's organism, if pure, was not the same as Fleming's, since Fleming's guinea-pigs showed no inconvenience while Gilchrist's died in about a week.

Lastly, I may allude to a patient shown by Sir Almroth Wright at his visit to the Dermatological Society of London in 1904.[1] This patient had suffered from the severest form of acne for many years, but on careful treatment with

[1] British Journal of Dermatology, 1904, p. 296.

staphylococcic vaccine the whole of the suppuration had disappeared, leaving his face studded with non-inflamed comedones. The ultimate pathology of acne is, in my opinion, still unknown, and will probably be found to lie in some form of toxæmia, but I am convinced that it is a retrograde step to look upon it as a specific infective disease caused by this one very ubiquitous organism.

I am, Sir, yours faithfully,

April 14th, 1909. ARTHUR WHITFIELD.

AMPUTATION THROUGH THE HIP-JOINT.

To the Editor of THE LANCET.

SIR,—In the two cases of amputation through the hip-joint reported in THE LANCET of April 3rd by Mr. E. W. Roughton and Mr. T. P. Legg, I notice that the femoral artery and vein were first tied, but it is not stated whether any interval was made between the ligature of the artery and vein. In March of last year I had to operate at the Government Hospital for an enormous sarcoma of the femur. I first tied the femoral artery, and then, after an interval of about three minutes with the limb elevated, ligatured the vein. My idea was that the blood in the limb would thus to a great extent drain back into the patient's body and thus be instrumental in preventing shock. The same principle is involved in the use of the Esmarch bandage, but, of course, in a case of malignant disease this would be out of the question. Wyeth's pins were then introduced and the operation completed in the usual way. The pulse, which was 120 before operation, rose to 130 after completing the disarticulation. A saline and brandy enema was then administered, and before the patient left the theatre his pulse had sunk again to 118 and was of good volume and tension. From the point of view of shock, therefore, the operation was very satisfactory. The patient's recovery was rapid, the wound healing by primary union, but as he has never been seen since his discharge from hospital I cannot say whether recurrence ever took place. Mr. Legg says: "When amputation through the hip-joint is done for periosteal sarcoma of the femur the muscles should be cut as closely as possible to their pelvic attachments; this is impossible in Wyeth's method." This may be so, but I would venture to suggest that whatever method be adopted (direct abdominal pressure, Wyeth's pins, &c.) the blood in the limb should be first drained into the body in the manner I have indicated. The importance of ligating artery first and vein later after an interval may be well recognised by operating surgeons, but I do not think the point is sufficiently emphasised in the average text-book.

I am, Sir, yours faithfully,

A. WEBB JONES, F.R.C.S. Eng.,
Surgeon, Government Hospital, Alexandria.

Alexandria, Egypt, April 11th, 1909.

THE INTERNAL ANTISEPTIC TREATMENT OF INFLUENZA.

To the Editor of THE LANCET.

SIR,—From time to time we find antiseptics given internally for various diseases, but no one, to the best of my knowledge, has ever advocated a systematic and universal use of the same. I will deal with the simple treatment of influenza. It has been stated by five or six eminent men that there is no preventive treatment for this disease. I find it impossible to agree with this, as proved in numerous cases and from personal experience. Quinine has been advocated, but it often fails. Failures are turned into successes if carbolic acid is given with it. This is a prescription which I think curative as well as preventive:—

℞ Quin. disulph. gr. ii.,
Ac. carbolic. (pur.), glycerini aa gr. liss.,
Ac. hydrobromic dil. ʒi.,
Tr. hydrast. aquos. ʒi.,
Aq. ad ʒviii. ft. mist.

Sign. An eighth part three times a day, one hour after food. If case is severe every three hours, one hour after food.

No doubt the small dose of quinine will cause some to smile, but the old saying about "the proof of the pudding" applies in this case, and as this dosage has been given for so many years and in some thousands of cases with a death-rate of about 1 per 1000, I have excellent reason to believe in it. Moreover, large doses often defeat the end in view. Some lung cases, and those that have been weakened by salicylates, do better for a time with a prescription of ammon. carb., glycerine acid. carbolic., and tinctura cinchon. co. The old system of profuse sweating in influenza is most mischievous and often leads to lung complications and a long convalescence. Everyone is agreed that rest, warmth, and good, light, nourishing food, with fresh air, are correct treatment. I condemn strongly the use of salicylate of sodium or any other preparation of salicylic acid in influenza; they seem to relieve but at the expense of the bodily strength, especially the heart, and, as a rule, convalescence is prolonged after their use. Alcohol is injurious and can only be permitted sometimes and with careful watching in pneumonia after influenza. Nitrate of potash, vinum antimoniale, and tinctura aconiti are, in my opinion, drugs that ought to be consigned to the scrap-heap. The heart power must be kept up and it may be necessary to add strophanthus or digitalis to the mixture, but not in large doses. There are many patients with chronic debility after influenza who for months or even years have tried all sorts of tonics and change of air with very often but little improvement. I have seen many in Bournemouth and have found that the quinine mixture always puts them right in a short time. Special treatment is not required for the pains in the head and limbs in influenza, as the great point to bear in mind is that these varying symptoms are simply manifestations of one and the same toxin that has veritable protean possibilities, and must be eliminated by its proper antidote, which I have mentioned.

I am, Sir, yours faithfully,

Leeds, April 6th, 1909. F. W. CORY.

*** Mr. Cory's note is intended to support the general use of antiseptics internally, but we doubt if the argument will be considered a very strong one. But a prescription which has proved of practical use has always some claims on publication.

THE PROXIMATE FACTOR OF DELIRIUM TREMENS.

To the Editor of THE LANCET.

SIR,—In his letter to THE LANCET of April 17th, Mr. F. S. D. Hogg, referring to continuous and periodic drunkards, states that "the latter are just as liable to suffer from delirium tremens as are the former." I am loth to believe that this is a considered pronouncement on his part. It is not in accordance with generally received views, and it is entirely opposed to my own experience at the Norwood Sanatorium. In every case which occurred in that institution in past years, the patient was a continuous drinker; no purely periodic drunkard ever suffered. The majority were patients who rarely became intoxicated and then but slightly so; some had not been intoxicated for years. The latter are not, strictly speaking, drunkards at all; they have established a high grade of *tolerance of alcohol* and can only be said to suffer from chronic alcoholism. Such are strictly comparable to chronic morphinists, who, through long persistence in their habit, have eventually succeeded in establishing a high grade of tolerance of morphia, and the results of sudden withdrawal are in both cases analogous. Of course, there are chronic alcoholists who suffer from recurrent inebriety also, and these are equally prone to develop delirium on sudden withdrawal. But here the primary factor of the complication is the chronic, not the intermittently exaggerated, drinking. It is true, however, that a drunken outburst in one who habitually takes large quantities of alcohol without becoming intoxicated does often lead him, in a fit of remorse, to become suddenly an abstainer, and in such cases the drunken fit may properly be regarded as the *indirect* factor of the delirium. But even here the *proximate* factor is the sudden abstention.

I do not suppose that Mr. Hogg intentionally suggests that the occurrence of delirium tremens at Norwood in the past was due to ignorance on my part of the well-known sedative and hypnotic influence of the bromides and chloral hydrate. As a matter of fact, practically all the cases arose in spite of the prophylactic influence of such drugs, the frequent uselessness of which was peculiarly well shown on two occasions. Bromides in massive doses were given through the day and hypnotics at bedtime. As a result several hours' satisfactory

sleep was obtained (six in one case, four in the other). Yet in both the patients awoke in wild delirium. On the other hand, since it has been the rule (a period of one and a half years) to taper off the alcohol *in patients who had established tolerance*, there has been no case of delirium, nor any which suggested a fear of that complication. Moreover, when tapering is carried out bromides and hypnotics are rarely called for.

The widely diverging views which obtain as to the expediency of sudden withdrawal are, I believe, reconcilable if we keep clearly in mind the full significance of tolerance. Tolerance of alcohol (i.e., acquired tolerance) implies intolerance of sudden withdrawal. It is not acquired through heavy intermittent drinking bouts, however frequent, but only through frequent regular drinking which stops short, often far short, of the intoxication point. Those who so drink inflict on themselves gross organic tissue changes, but they are not, as a rule, an intolerable nuisance to their friends or the general public. Hence I do not believe that many such find their way into licensed retreats any more than they do into the police court.

I am, Sir, yours faithfully,

Upper Norwood, April 20th, 1909. FRANCIS HARE.

CROOKED QUESTIONS AND URBANE ANSWERS.

To the Editor of THE LANCET.

SIR,—The amiable reproof which *Punch* has administered to you in a recent issue for the promulgation of alarmist views is put into the mouth of a "Paterfamilias" who is understood to ask certain "plain, blunt questions." To some of these, notwithstanding a knowledge of the pitfalls which a cross-examiner is able to prepare for a witness, it should not be difficult to reply, and to show, contrary perhaps to expectation, that the interrogator is right to be anxious on the different points. It is asked, in the first place, whether cocoa causes cancer? If cocoa does not agree with "Paterfamilias," and he is of the age when cancer is most prevalent, he had better avoid it. A person who dislikes cocoa may say with perfect safety that it causes cancer, for no one can contradict him, and in all probability he will find acquaintances to furnish him with "facts" in corroboration of this view. The next question put is whether tobacco "is all that it has not yet been declared to be?" and I pause before its exhaustive character. Most of the tobacco that has been analysed has been pure; but some of it has been associated with very strange bedfellows, and one hesitates to put any limit to the ingenuity of adulterators. Then it is asked whether wool is the worst thing to wear next the skin; and the answer depends mainly upon climatic and other conditions. Under some of these conditions either silk or cotton is to be preferred; when wool, in other conditions the best, may be the worst of the materials commonly employed for underclothing. The next question is, "Does ozone cause pulmonary disease?" Yes, certainly, if inhaled in too great a degree of concentration; although, as usually present in the atmosphere, it is as harmless as the alcohol in hot-cross buns. An inquiry whether bread-and-milk is explosive arrests one for want of definitions. Bread may be or may contain anything if the legal penalties are disregarded; and milk has more than once been responsible for explosions of epidemic disease. It is asked next whether the daily newspaper is a source of contagious and infectious disease, and whether we ought only to read it in gloves and a respirator? No doubt the newspaper falls within the general class of fomites to which the physicians of the last century paid so much attention; and a cleanly person who entered a public library in a slum district might be thankful for gloves, even if he dispensed with the respirator. Then it is asked whether it is as beneficial to burn coal as to swallow it, and the answer depends entirely upon circumstances. The internal administration of carbon to a dyspeptic may be greatly more to his advantage than the presence of a fire in his grate. The last inquiry is whether a vegetarian diet fosters a military spirit? To some extent this question was examined by the late Dr. W. B. Carpenter many years ago, when vegetarianism was a comparatively new idea and when its supporters claimed for themselves a special endowment of the virtues arising from a complete control of all animal passions. He showed that the extremes of ferocity and gallantry were to be found among vegetable feeders; and he instanced the rhinoceros and the cock as familiar examples of the facts. It may be suggested that, though the comic opera notion of the soldier is that he is of a fierce and amatory disposition, the amenity to discipline is the true display of the "military spirit." Of this endowment there is no particular evidence among the ranks of vegetarianism more than among those of any other class.

I think that the questions put by "Paterfamilias" in the columns of *Punch* are more reasonable than many which are set by examiners for professional degrees and diplomas.

I am, Sir, yours faithfully,

April 17th. F.R.C.S.

THE DRAINAGE OF CAIRO.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

WHOLESALE CONTAMINATION OF THE SUBSOIL.—APPREHENSIONS IN REGARD TO THE DRAINAGE SCHEME.—UNFAVOURABLE SITUATION OF THE EUROPEAN QUARTER.—THE NEED OF BUILDING REGULATIONS.

Cairo.

NEXT to the question of the water-supply comes that of the drainage of Cairo. As already explained,[1] the water-supply problem stands foremost because it is a question of the present. Everybody recognises the position; it is impossible not to see that the water is sometimes full of dark coloured matter, that it stains the linen, is hard, spoils boilers and engines, in fact, that it is unsuitable for domestic and industrial purposes. The urgency of the water question is therefore obvious to all. The drainage question, however, is little less urgent.

For a quarter of a century there has been talk at Cairo of drainage schemes and nothing has resulted; therefore, it is a little difficult to realise that now at last sewers are actually going to be constructed. As the result of these numerous disappointments a widespread lack of faith still prevails. It must also be borne in mind that the vast majority of the inhabitants of Cairo have no experience whatsoever of drainage schemes and do not know what they mean. They have never been taught the benefits that result from well-conceived and properly applied systems of drainage. They do not realise that such measures have been the means of saving millions of human lives and of prolonging the lives of other millions. But they do know that when the subsoil of Cairo is disturbed, when excavations were made for the foundations of the new premises of, for instance, the National Bank, and for other large buildings, there were cases of typhoid fever in the immediate neighbourhood. Thus it happens that to-day when it is proposed to lay sewers in all the streets this prospect has created something approaching a panic. The sense of the proportion of things is entirely lost and many persons inquire whether the digging of trenches for the sewers will create an epidemic. Of course, it is quite possible that, in spite of the somewhat elaborate precautions it is proposed to take, some cases of sickness may result from the moving of foul earth. With regard, however, to an epidemic the question presents itself the other way round. It is not a matter of creating an epidemic but, on the contrary, of getting rid of the epidemics that already exist, which are so firmly established that the conditions may more accurately be called endemic. The present death-rate at Cairo is scandalous. If the statistics of some typical European town that has a proper drainage system and water-supply be taken as an example, it will be found that even when, during the course of the year, there has been an epidemic, still the mortality of such a town will be much below the normal death-rate of Cairo. When the streets are dug up to lay the sewers in Cairo there may be a good many cases of disease provoked by unwholesome effluvia. It is, however, quite certain that many cases of disease connected with insanitation exist already and will continue to exist in the future whether the new trenches are dug or not. According to the last official returns published during the year 1907 there were 342 deaths from diphtheria and 141 from typhoid fever,

[1] THE LANCET, April 3rd, 1909, p. 1014.

therefore it was not necessary to open up the streets to produce these diseases. The general death-rate among the Egyptians in 1907 was 38·4 and 27·4 among the foreigners. It is not till the drainage system is completed and a well-considered general programme of sanitary reform strictly applied that this devastating death-rate will be largely reduced and a real improvement obtained.

The question in the public mind is whether, when the trenches have been dug and the sewers laid, there will be a reduction in the prevalence of preventable diseases. The scientific man can make only one answer. In the light of past experience, and going back to the time when it was not known how to build sewers properly, and when all sorts of blunders were committed, actually creating epidemics and resulting in the loss of many lives, the advantages of sewerage schemes are known to have far out-balanced the disadvantages; the sacrifice of life has been literally nothing in comparison to the salvation of life. It is impossible to have an omelette without breaking eggs, and Cairo cannot be purified without stirring up some filth. But it is better to stir up this filth and to remove it than to allow it, as at present, to continue to accumulate in volume and in foulness. As it is, Cairo has been described as a town floating on cesspools, and it was perhaps inevitable that it should continue to wallow in filth while the country remained in financial difficulties. Now, however, that Egyptian finances have been put in order we are promised that some money at least will be forthcoming to save the lives of the inhabitants. It is the duty of all sanitarians to see that the promises are carried out.

One of the leading sanitary reformers of France, the late Professor Brouardel, speaking of Toulon, described this great military port as a town built on *un sol fécalien*. This definition can as appropriately be affixed to Cairo. In the first instance the natives had perhaps a better sanitary instinct. The custom that still prevails in rural districts is for the males to relieve themselves on the manure heap which is generally near the entrance of their dwellings; the females, desiring greater privacy, utilise for this purpose the roofs of their houses. In both cases nature's disinfectants, the air and the light, play upon and purify more or less that which is impure. But, and though this primitive procedure still prevails to some extent even in Cairo, its continuance has not been found practicable at least in the narrow and crowded streets. Consequently, cesspits were dug, but as it costs money and trouble to empty them they are deliberately made as porous as possible and the whole percolates into the surrounding subsoil. Thus the ground on which Cairo stands is impregnated throughout with fæcal matter and urine, together with all other sorts of foul slop water and organic substances in a state of decomposition. The purifying action of the earth is obviously overtaxed in such a densely populated centre as Cairo. The emanations from so foul a subsoil are well calculated to predispose the inhabitants to epidemic and other diseases. In the meanwhile, and till the drainage works are carried out, the only advice that can be given to persons who live in Cairo is that they should sleep in the top of their houses—that is to say, as far as possible from a soil which must be largely polluted.

Some owners of private houses and of large hotels have sought to cope with this evil by building various forms of cesspools based more or less on the septic tank principle. The manager of one fashionable hotel explained with justifiable self-congratulation how his cesspool acted so well that the effluent was quite clear, and such enterprise and public spirit deserve warm commendation. If everyone did the same the soil would not be so foul, for such a clarified overflow can be dealt with by the subsoil as the crude sewage cannot be. Besides, if a few houses and hotels do deal satisfactorily with their sewage, sewage from the rest of the town passes through the European quarter as it follows the natural flow of the subsoil water from the more elevated, more crowded, and filthy native quarters finally to reach the Nile. The natives with a true hygienic instinct have always avoided living on the banks of the Nile. They fear the floods, for if the water of the rising Nile does not actually penetrate into their houses it certainly comes up in the subsoil to within a few feet of the surface. Thus there is more damp, more miasma, and insecurity in regard to the solidity of buildings. Formerly what is now the European quarter consisted of spacious, umbrageous gardens, with but few low-roofed dwellings. To-day, and without any sort of regulation or restraint, speculators are constructing huge, lofty tenement houses dominating streets which are not wide enough in proportion to the height of the buildings. Thus they shut out the purifying light and air from above, while the atmosphere within these hot and lofty dwellings reeks of the effluvia from the soil below. It seems to all who consider the matter that by-laws regulating building operations should now be insisted upon.

Here is an experience. In a narrow yard between two big blocks of buildings I was shown the flagstones in which were the openings of vast cesspools into which both these blocks drained. At times the cesspools overflowed into the yard and the stains on the walls showed how high this concentrated sewage might reach. The inhabitants had the cesspools emptied, but this was of no use. In a few days they were full again, not with soil from the adjoining blocks but with infiltrations from the surrounding land, and when the Nile rises the cesspools overflow into the yard. The rise and fall of the Nile in the subsoil is one of the principal factors governing the whole problem. A medical practitioner related to me that he had built himself a house and thought he would dig for water. He went down some 20 feet before he could find any water. A little later, however, the Nile began to rise, and then the water in his well came up to within five feet of the surface. It is claimed that this annual inflow and outflow of the Nile in the subsoil of the lower parts of Cairo is a great benefit, for it washes away the dirt. But, on the other hand, if it does carry away some of the foulness it also helps to spread it about broadcast. The flood penetrates the cesspools and carries their contents into the surrounding subsoil. A small portion may reach the Nile, but the greater part of the contents of the cesspools is likely to be deposited in the earth, polluting the subsoil to such an extent that the inhabitants of Cairo are afraid to dig it up. Thus are engendered those apprehensions in regard to the drainage scheme which I have already mentioned.

To allay such fears an official statement has been issued by the sanitary authority and circulated in the press. We are thus informed that the trenches in the wider streets will in no case exceed the depth of five metres and in the narrower streets three metres. As these trenches are shallow they can be made very narrow, therefore the amount of earth to be disturbed and dug up will be reduced to a minimum. The authorities claim that there will not be more excavation than what actually takes place when new hotels and large houses are built. Further, to reduce the risk and to push forward the work more rapidly, there will be overhead cableways to conduct the material as soon as it is excavated to the trenches which are ready to be filled up. Any surplus matter that cannot be thus and at once dealt with will be covered with a disinfectant and carried away. What perhaps is more important, so far as the visitors are concerned, is the fact that none of this work will be done during the tourist season, for that season corresponds with the high Nile, when the water in the subsoil would interfere with such excavations.

The first object of course will be to prevent the further contamination of the subsoil by providing water-tight drains, and we may be sure that the work will throughout be as good as trouble and experience can make it. If Cairo has suffered long it at least enjoys to-day the advantage that during all this time other towns have made great experiments, have spent large sums, and have thus accumulated evidence affording many valuable object lessons for more backward localities. These indications as to what to do and what to avoid, now that the capital of Egypt is entering upon a career of sanitary reform, should prove of great practical service to its administrators and governors. From what I have seen of the drainage scheme it seems clear that considerable attention has been bestowed upon all schemes elsewhere existent. Many of these have been rejected as antiquated or as unsuitable, and much that is altogether novel is, I understand, to be introduced. Thus the plan before us is doubly interesting: first, because it proposes to render Cairo a healthy city though at present it is exceptionally unhealthy; and, secondly, because this is to be done by the application of the most modern procedures.

(To be continued.)

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Bristol University.

THAT the establishment of a modern university is no light task is attested by a recent report of organisations founded at the beginning of the year by the lecturers of University College, Bristol. Each of these is controlled and promoted by an organising secretary with a "nucleus" committee to be increased at discretion. The first scheme is the establishment of a unit of the Officers Training Corps. This at present hangs fire, for although there are 45 students willing to join (the necessary minimum being 30) there is uncertainty as to whether the War Office can recognise the unit before the University charter is granted. The formation of a hostel for men students is also being promoted; data have been collected which show that specially erected premises would cost too much, so that buildings already standing will have to be adapted to the purpose. Similar considerations have determined the formation of a club for men students which is now in existence. It was found that a new building would be far too expensive, so negotiations were opened with a neighbouring restaurant proprietor, with the result that on March 2nd part of his premises were declared opened as a Students' Club. Members of the University College Union are to pay 10*s.* 6*d.* per session and non-members 21*s.* For these fees the members of the club (who already number 50) will have meals at special terms, the use of a reading-room, a billiard-room, and a cloak-room, with attendance. It is proposed to have evening lectures, and it is hoped that the union committee and the proposed debating society may meet there. The Birmingham University Club has spontaneously offered to make arrangements for reciprocity of membership. The fourth organisation, an Association of Alumni, was referred to in my last letter. The committee appointed to organise athletics hopes to arrange annual matches in football, cricket, and tennis with the University of Birmingham and also between the various departments of the University.

University College: Department of Economic Biology.

In the course of an interim report to the Senate and Council of University College, Bristol, the executive committee of the Department of Economic Biology (which has been in existence since 1907) gives an interesting account of the work done. This falls under five headings—research, field trials, consultative, museum, and educational work. Under the heading of research mention is made of investigations relating to fowl tuberculosis, the development and maturity of local crustacea, the geology and chemistry of the soil of cider orchards, the application of electricity to plant growth, a root disease of gooseberry and black currant bushes, a disease of mangolds, the yeasts of cider, and so on. The field trials have related to the use of calcium cyanamide as a manure, the manuring of grass land, and the inoculation of leguminous crops. The department has been consulted many times with regard to insect pests, poultry breeding, and diseases of plants. The Bristol Museum collection of specimens illustrating the life-histories of the commoner agricultural pests has been largely increased, up to nearly 100 groups. Some of these have been exhibited by request at agricultural shows. A series of lectures on fruit growing and cider making, and others on anthrax and actinomycosis, have been fairly attended. A brief account of investigations into the scientific aspects of Cheddar cheese making is given by Mr. D. Spence, Ph.D., who was appointed to this work by the department, the expenses being paid by the Somerset county council. He finds that pure cultures of bacteria may be used with advantage as "starters" in cheese making, and attributes the colouring of cheese, in part at any rate, to the action of enzymes. Other important observations have been made on the salting and fat content of cheese. The report is of great interest in that it shows how well agriculture may in the future be served by scientific research.

Bristol Eye Dispensary.

The ninety-seventh annual meeting of the supporters of this institution was held on April 6th. The report stated that the number of patients attending in 1908 had been 2408, an increase of 53 over the preceding year. The total receipts were £207 and the total expenditure was £217. An increase in the number of regular subscribers was asked for. The examination of school children has meant an appreciable increase in the number of refraction cases, and there was a general feeling at the meeting that the education authorities should not allow this work to fall upon a charitable institution. In the evening the dispensary staff exhibited a number of interesting cases to medical men who were invited. There was a good muster and this was felt to be a successful innovation.

The Barnstaple Rural District and the Local Government Board.

As already stated in THE LANCET, the Local Government Board considers that it is impossible for one sanitary inspector to be responsible for the Barnstaple rural district, and consequently insists on the appointment of an additional officer. The Barnstaple rural district council has again urged the Local Government Board to alter its decision, but the Board refused to do so, and in a communication read at the meeting of the district council held on April 16th again informed the council that an additional sanitary inspector must be appointed. A resolution was passed, which will be sent to the Local Government Board, stating that the district council will still continue its present arrangements. This means that the council will have to pay the whole of the salary of the sanitary inspector, as previously the Local Government Board had allowed half of the amount.

The Gloucestershire County Council and Post-mortem Examinations.

At a meeting of the Gloucestershire county council, held on April 15th, the chairman stated that the finance committee had written to the Home Secretary in consequence of the number of post-mortem examinations ordered by the coroner for the southern division of the county, Mr. E. M. Grace. The Home Secretary having informed the committee that the matter was not in his jurisdiction, the Lord Chancellor had also been approached upon the matter and he had acknowledged the receipt of the letter, and although the committee had again written to him it had received no acknowledgment of its communication. As the chairman remarked there was no other person to whom to refer the matter, it is presumed that the subject will now drop.

Alcoholism and Medicated Wines.

At a meeting of the sanitary committee of the Cornwall county council held on April 15th Mr. J. M. Nicholls, J.P., of St. Ives drew attention to the question of medicated wines. He stated that as a medical practitioner it had come to his knowledge that temperance people were recommended medicated wines and had thought them a "wonderful pick-me-up." Mr. Nicholls proposed that it should be pointed out to the Board of Trade that it was desirable that all medicated wines should show in a prominent part of the label the percentage of alcohol and nutrition which they contained. The committee decided to adopt Mr. Nicholls's suggestion.

The Exeter Asylum.

At a meeting of the Exeter city council held on April 7th it was decided to obtain the approval of the Commissioners in Lunacy for the proposed extension of the asylum and the erection of a residence for the medical superintendent. The cost of the scheme is estimated at about £10,000, and it was determined to apply to the Local Government Board for permission to borrow that sum.

Death of John Carful Mackay, M.D. St. And., L.R.C.P., L.R.C.S., L.M. Edin., J.P.

Dr. J. C. Mackay, who died at Melness, St. Columb, Cornwall, on April 7th, in his fifty-seventh year, was born in Watten, Caithness, and qualified L.R.C.P., L.R.C.S. of Edinburgh in 1877. He commenced practice at St. Columb in 1882 and was shortly afterwards appointed medical officer of health of the district. For several years Dr. Mackay was medical officer of the workhouse and public vaccinator of the third, sixth, and seventh districts of the St. Columb union. He also for some considerable time held a commission in the 2nd V.B. Duke of Cornwall's Light Infantry, retiring with the rank of Surgeon-Captain. In 1893 he graduated M.D. of St. Andrews, and in 1908 he was placed on the commission of the peace for the county of Cornwall. On his retirement from practice after more than a quarter of a century's professional work in St. Columb and the district, his many

friends and patients presented him with a solid silver tray and tea service and silver rose bowl, accompanied by an illuminated address with 381 signatures of subscribers. Dr. Mackay was a staunch Churchman and a generous contributor to the restoration of the fine old parish church of St. Columb which took place about four years ago. He will be much missed at St. Columb, where he was highly respected, for he always had taken a great interest in all movements calculated to promote the welfare and pleasure of the inhabitants. His aged mother survives him and sincere sympathy is felt with her and his widow. The funeral, which took place at St. Columb Cemetery on April 10th, was largely attended.

pril 20th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University.

THE summer term commenced on Monday last and, recognising the shortness of the period which now separates them from the examinations, the students have thrown themselves quickly and heartily into their work. The number of new entries cannot yet be estimated, but the prospects appear favourable, though it is not usual for many students to enter in this term. It is rumoured that some important changes will take place in association with the surgical staff of the University before the winter term commences, but no official statements have yet been made with regard to the matter.

The Children's Hospital.

At the last quarterly meeting of the board of governors of the Children's Hospital, a deputation from the Aston Villa Football Club and the Variety Theatre's Charity Sports Committee presented to the hospital a cheque for £1000 for the purpose of endowing a new cot. In making the presentation, Mr. F. W. Rinder, who represented the football club, stated that the Aston Villa club, since its formation, had been the means of raising and distributing for charitable purposes over £25,000, and he assured the governors that the sports committee would give what help it could to the scheme for the new building. Speaking for the sports committee, Mr. J. E. Margoschis said that in addition to subscribing to many other charities, and beyond the sum now presented to the Children's Hospital, his committee had, since its foundation, handed over to the General, the Queen's, and the Children's Hospitals a further sum of about £1500, and he hoped that the work would be continued for many years.

The Health of the City.

Dr. J. Robertson's report for the week ending April 17th is the most satisfactory report which he has issued this year, for although the total death-rate—18·4 per 1000—is 1·4 per 1000 higher than that recorded for the week ending April 3rd, the other features of the report are all very satisfactory. In the first place, the city is free from typhoid fever; there have been no deaths from this disease during the past fortnight. No fresh cases have developed and the hospital is empty. The other satisfactory features recorded in the report are the decline of the epidemic of measles and the decrease of diphtheria. In the week ending April 2nd there were 30 deaths from measles, but last week only 11 deaths were due to that cause. As regards diphtheria, the number of cases in hospital has been reduced from 107 during the week ending March 6th last to 64 last week, and the total zymotic death-rate has fallen to 2·6.

The Water-supply and Lead Pipes.

It has been repeatedly stated that our Welsh water-supply is dangerous on account of the solvent action of the very soft water on lead pipes; the statements have never been supported by any satisfactory proofs, and as the result of a series of experiments made by the city analyst they may be dismissed as devoid of foundation. Samples taken at intervals from consumers' taps were found devoid of any serious amount of lead. If the water is allowed to stand in lead pipes for a month or more it does dissolve a certain, but not an excessive, amount of lead. The experiments showed that water standing in lead pipes exercised some influence in making a protective covering, and taken as a whole the results of the experiments indicate that the Welsh water has no violent action on lead pipes, even when the pipes are new, and what action there is rapidly decreases as the pipes become older.

The Adulteration of Butter and Milk.

The annual report of the city analyst for the year 1908 shows that so far as butter is concerned there was less adulteration by preservatives than in any previous year; on the other hand, the amount of adulteration in other ways showed an increase over 1907, but was less than in 1906. The adulteration of milk by preservatives was also very slight, but the proportion of adulteration by water or skimming was greater than in the four preceding years. The latter result, however, in the opinion of Mr. Liverseege, does not actually indicate an increase of adulteration, but is due to the increase in the number of samples taken. We may, therefore, congratulate ourselves that, so far as adulteration of two of our principal foods is concerned, there appears to be less adulteration than in the past, and as the prosecutions of the adulterators have resulted in many cases in the infliction of severe fines we may hope to suffer still less from adulteration in the future.

Medical Inspection at Smethwick.

The first annual report of Mr. W. F. Marsh Jackson based upon the examination of 6897 children in Smethwick schools is decidedly optimistic, as may be gathered from the reporter's conclusion that the results he has obtained justify the opinion that so far as Smethwick is concerned there is no manifestation of physical degeneration. Nevertheless, it appears from the report that nutrition was below the normal in 23·8 per cent. of the cases, that the teeth were defective in 22·4 per cent., and vision in 15·2 per cent. The defects of hearing were less numerous; there was only a small proportion of lung and heart diseases; and a still smaller proportion of tuberculous affections.

April 20th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Report on the Liverpool School of Tropical Medicine.

THE Government Blue-book containing the annual report of the Advisory Committee for the Tropical Diseases Fund for the year 1908 has recently been issued. From this Fund the Liverpool school receives a grant of £1000 per annum. The report speaks highly of the accomplishments of the school, the committee stating that it is of opinion that the work continues to be of a high order of merit and fully justifies the continuance of the grant. The Government grant is spent partly in payment of the salaries of special lecturers and partly towards the cost of research work carried out at the school. The committee approves of the work to be carried out by means of this grant. It is satisfactory to find that the work of this school continues to merit expert approval, as all who know anything of public events felt confident that it would. There is no department that has done more to increase the reputation of the University of Liverpool than the School of Tropical Medicine. It is known all over the world, and its great work in the cause of humanity is everywhere appreciated. Professor Sir Rubert Boyce, who was sent by the Liverpool School of Tropical Medicine, at the request of the Secretary of State for the Colonies, to Barbados to investigate a slight outbreak of yellow fever there, has now left Barbados on a tour round the neighbouring West Indian Islands with a view to advising on matters of sanitation. Sir Rubert Boyce completed a great amount of work whilst in Barbados and, in addition, delivered useful lectures on sanitary science to the medical staff of the island, the leading merchants, the agricultural societies, and the consular corps, having been in touch with all classes of the community, and directed a very straightforward message to all. Dr. A. Kinghorn and Mr. Montgomery, who were sent out to Central Africa on behalf of the Liverpool School of Tropical Medicine to inquire into the possibility of, and means of, checking the spread of sleeping sickness into British Central Africa, have recently returned to England after a sojourn of about two years in those territories.

The Proposed New Out-patient Department at the Royal Southern Hospital.

The new out-patient department at the Royal Southern Hospital will occupy a site in Caryl-street immediately opposite the main building. The land was acquired and cleared by the committee some years ago in anticipation of the necessary funds for building which, I understand, are now forthcoming. The cost of this much-needed provision for the proper dealing with some 50,000 attendances of out-patients a year will be about £8500, of which the city council is empowered to vote £4000. The whole of the amount is now available, but for furnishing the new department there is still required an additional sum of £1200. In the erection of the new buildings the latest scientific ideas are being carried out. In order that the out-patients may not communicate infection to the in-patients, the new building is to be completely separated from the hospital proper; and, in the second place, the plot of land is large enough, being 960 square yards in extent, to allow the air to circulate freely all round. The large waiting-hall, which is to be placed in the middle of the building, will be carried considerably higher than the surrounding offices, thus enabling the whole to be lighted on all four sides, and the windows will be arranged so as to afford a thorough draught. Suitable accommodation will be provided for the medical and nursing staffs, separate entrances being provided. The building is to be faced with red pressed bricks and stone bands, and the roofs are to be slated with the outputs of British quarries. Building operations will commence immediately, and, when completed in about 12 months' time, will result in an ornate building which will be an important addition to the hospital equipment of the city.

The Fireguard Clause of the Children Act: The First Liverpool Prosecution.

The first Liverpool prosecution under the "fireguard" clause of the Children Act was heard at the Dale-street police court on April 16th. The defendant, a widow, was charged with having allowed her daughter, aged six years, to be in a room where there was a fire in an open grate without sufficient protection against the risk of the child being burnt. The defendant said that she was out working at the time her child was fatally burnt, and pleaded poverty as the reason for not being able to provide a guard. The magistrates advised the woman to procure one and dismissed the case, as the police confirmed her protestation of poverty.

Death of Edward Penrose Twyford, M.D. Edin.

Dr. E. P. Twyford, late of St. Helens, died on April 8th, at his residence at Birkdale, near Southport, as the result of a short attack of pneumonia. The deceased retired from practice a few years ago after 55 years of active work. The death of his only daughter, Mrs. Gray, widow of the late Dr. Gray of St. Helens, at the beginning of this month, had a very depressing effect upon him, and probably accelerated his death. He was 78 years of age. He held the commission of the peace for the borough of St. Helens and also for the county of Lancaster, and was held in the highest esteem by the inhabitants of St. Helens and neighbourhood.

April 20th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Medical Aspects of the Poor-law Commission Report.

CERTAIN points of notable interest and importance were brought to the front the other day in a discussion before the Economic Section of the Royal Philosophical Society of Glasgow on Some of the Medical Aspects of the Poor-law Commission Report. Dr. John C. McVail, medical officer of health of Stirlingshire and Dumbartonshire, in opening the discussion put forward a scheme with the idea of checking disease, not only in paupers, but at its very beginning also in those who were not paupers, but through illness had every chance of becoming so. It was suggested that this should be done by medical provident institutions. If the country were divided into areas for medical provident purposes, if all the medical men living within that area were allowed to put their names on the list of the institution as willing to act, if all who were willing to receive its benefits were allowed to contribute a fairly sufficient amount to make them realise that what they were getting was worth paying for, the State might subsidise such institutions so as to have a share in the control. In institutions of that kind there was no reason why there should not be periodic visits by the medical man to all the cases on his own list, not very frequent, say once in the 12 months. He would visit, not because he had been sent for, but he would go to the homes to see whether the people were well, to ask questions, to give guidance to parents as to the upbringing of children and the kind of occupation for which they were fitted. All that might be Utopian, but Dr. McVail could not see why some such scheme should not be adopted. In the course of subsequent discussion Dr. A. K. Chalmers, medical officer of health of Glasgow, referred to the question of charitable medical relief in Glasgow, stating that he had worked out for another purpose there were 140,000 people receiving such aid every year, or one out of every five or six persons.

Convention of Royal Burghs of Scotland.

At the convention held in Glasgow recently the Lord Provost of Dundee called attention to the subject of pulmonary phthisis and the position thereanent of the public health authorities, and moved that the matter be remitted for further consideration. It was also suggested that the Government be asked to give a grant to local authorities, who either by themselves or in combination would take active steps in dealing with the disease. It was pointed out, on the other hand, that if in Glasgow they treated pulmonary tuberculosis as they did scarlet fever and other ordinary infectious diseases they would have 3000 consumptive cases for hospital and 1*s.* per £ would not cover the cost. The Glasgow health committee was spending its energy in seeking to get at slum property and insanitary workshops, and in that way preventing people from contracting the disease.

Medical Inspection of Dumbarton Schools.

The Scottish Education Department has recently issued a memorandum on the subject of medical inspection of schools, and has advised boards to hold their hand until information has been obtained for the Department and workable schemes formulated. Notwithstanding this the School Board of Dumbarton has decided to have a preliminary medical inspection of the children in the burgh schools made by the local medical men with the view of assisting the board in determining (1) whether the condition of the children requires that the board should submit a scheme for the approval of the Department, and (2) what scheme, if any, should be submitted. The Departmental memorandum lays it down that any expense incurred by boards in this connexion will not be sanctioned till schemes have been adopted, but that difficulty is being overcome in Dumbarton by the medical men volunteering to carry out the preliminary inspection in question free of charge. It is computed that this action on their part saves the board a sum of £200.

April 20th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Vivisection in the Lay Press of Ireland.

ONE of the gratifying signs of the times recently made manifest in Ireland is the very active sympathy with scientific research which has of late been obvious in all directions. A specially encouraging example was a leading article which appeared on April 19th in the *Freeman's Journal*, in which sympathetic attention is called to the fact that "the people of science have been forced to start a Research Defence Society to meet the attacks of the sentimentalist." The testimony contained in the recently issued volume of the society our contemporary finds to rebut "the charges made violently against honest and humane men who work in the laboratories seeking the cure of human diseases and find in animal reactions the test of many medicines and in the examination of animal organisms the secret of many living processes and of many maladies and remedies." The writer proceeds to point out that the undeservedly abused votary of physiological and pathological science and the truly benevolent worker in the best interests of humanity, "plead not guilty to the charge

of inflicting pain upon animals, and they are very proud of having conferred great good upon humanity." The testimony of Professor E. H. Starling is quoted with thorough appreciation, to the effect that though he has been for 17 years engaged in the experimental pursuit of physiology yet he can say that "on no occasion has he ever seen pain inflicted on a dog or cat in a physiological laboratory in this country." In presence of the conditions and environments which influence the embryonic growth of our new Irish University, such candid and discriminating expression of lay opinion may be looked upon as one of the most encouraging omens of our national scientific progress.

Hospice for the Dying, Harold's Cross, Dublin.

All critical observers, friendly or otherwise, admit that the number and efficiency of the medical charities of our Irish metropolis stand relatively high among those of the various other capital cities of civilised nations. And the Hospice for the Dying, Harold's Cross, Dublin, is a unique institution even for Dublin. The claims of this institution were eloquently pleaded on Sunday last by the Very Rev. T. Maher, S.J., who detailed the circumstances under which this institution was founded a quarter of a century ago. The fact is recognised by all visitors that those victims of fatal disease who seek the refuge of the hospice are treated during the closing days of their lives with watchful care; and all Father Maher's hearers fully realised what a high standard of attainment the institution represented, having regard to the work which the Sisters of Charity are continuously engaged in performing in so many other fields of charitable endeavour. A large proportion of those who seek the shelter of the hospice are either poor patients who have been discharged from the general hospitals as incurable cases, or destitute ones who have been discovered in miserable and uncared-for surroundings by the sisters in their visits among the very poor. The consoling advantages to the destitute dying of the change to surroundings in which every possible attention and comfort are supplied cannot be over-stated. Since the foundation of the hospice thousands of victims of hopeless disease of all ages and of every creed have been sheltered and cared for within its walls, and every philanthropic citizen of Dublin, and of Ireland at large, feels hopeful that the generosity of our people will enable it to continue its splendid work.

Action by a Nursing Home.

The Irvinestown board of guardians were sued by the Belfast Incorporated Nurses' Home on April 17th at Enniskillen, before his honour Judge Craig, county court judge, for £2 18*s.* 4*d.*, in the following circumstances. It appeared that a nurse from the Belfast Nurses' Home was absent on sick leave at the Irvinestown Workhouse Hospital from Nov. 18th, 1908, until Dec. 2nd, 1908, but that during that time her sister, who is also a nurse connected with the Belfast Home, performed her duties and took her place. The guardians refused to pay the original nurse's sister for her services on the ground that they only allowed the sick leave on the understanding that she was to pay her own substitute. His honour, in giving a decree for the amount claimed, said in his opinion it was a shabby thing for the guardians to defend the action at all.

Mortality in Ireland.

For the week ending April 10th the highest death-rate in Ireland was recorded in Newtownards—viz., 40 per 1000 per annum of the population of the district; Ballymena, county Antrim, has a rate of 35·5 per 1000; and Galway, one of 35 per 1000. No other town exceeds 30 per 1000. The lowest rates were in Tralee (county Kerry), 5·3 per 1000, and Waterford, 9·75 per 1000. No other town was below 10 per 1000. The rate in Belfast was 27·0 and in Dublin 25·5 per 1000. The average rate in Ireland was 24·5 per 1000. The deaths from zymotic disease were 1·5 per 1000. 16 of the town districts had no deaths from zymotic diseases. Ballymena had three deaths from measles and one from diphtheria, and that town had the highest zymotic death-rate—19 per 1000.

The Irish Universities Commissions.

The two commissions appointed to draw up statutes, &c., in regard to the National University and the Belfast University, are working hard so that if possible both new universities may be able to begin work next October, when, if they are both ready, the Royal University will be dissolved. The National University Commission has made considerable progress in the financial arrangements, while the Belfast body has in the past given more attention to the framing of the statutes which are now practically complete. The National University Commission will have, it is said, special professorships in various branches of Celtic, and it is announced that the Belfast Commissioners propose to make appointments to the following additional professorships: modern history, economics, French and Romance philology, and botany. They also propose to make appointments to the following additional lectureships or readerships: archæology and ancient history, English language, Celtic languages and literature, logic and scholastic philosophy, physics, geology, organic chemistry, and bio-chemistry.

April 20th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Outbreaks of Typhoid Fever among Soldiers.

AT a meeting of the French Society of Military Medicine held on April 1st M. Rudler gave an account of an epidemic of typhoid fever which was attributed to infection of clothing and hands incurred by the men during a bathing parade for horses. M. Collignon then gave an account of the outbreak of typhoid fever which lasted for some 20 years—that is to say, between 1888 and 1908—in the 25th Regiment of Infantry stationed at Cherbourg. The outbreak was evidently due to the water of the Divette which was fouled by surface drainage. Despite the installation of Chamberland filters and afterwards of sterilisers on the Salvator principle, the fever did not disappear from the regiment until the day when the only drinking water used was boiled and flavoured with tea. On two occasions this supply was interrupted and the fever reappeared. This was due to the fact that there were two supplies of water, one being sterilised and the other impure, and the men, despite all precautions and the severest penalties, would go on drinking the impure water, which to their eyes appeared exactly the same as the sterilised water. M. Collignon proposed that in all garrisons where the water-supply was suspected the drinking water which was distributed should be boiled, flavoured, and sweetened. Another epidemic of typhoid fever broke out recently at Vannes and M. Collin gave an account of its origin. There are stationed at Vannes two regiments of artillery and two companies of infantry. One only of these two companies was attacked, while all other members of the garrison were immune. The company which was attacked used to eat salads which were supplied to them by a market gardener. This man had a daughter who was suffering from typhoid and her excreta were thrown into a ditch which was in the garden and also sometimes on the vegetable beds. Besides, there was a well only a few metres below this ditch and the water of this well was used for watering the garden. A bacteriological analysis revealed the presence of the coli bacillus upon the salad vegetables. 44 soldiers were attacked and five died.

Radium in the Treatment of Malignant Disease of the Œsophagus.

At a meeting of the Hospitals Medical Society held on April 2nd M. Guisez and M. Barcat said that in patients who were suffering from cancerous stricture of the œsophagus, which had been diagnosed both by œsophagoscopy and by examination of a fragment of the growth which had been removed, they made a careful examination to assure themselves that the passage of the œsophagus was free and then introduced a sound armed with radium bromide, which they left in place for several sittings of four to five hours. In these cases they used the highly penetrative rays of Dominici. The result of this treatment was the complete disappearance of the foul and blood-stained secretion and an augmentation of the calibre of the œsophagus, which in two of the patients got back to almost its normal dimensions. The speakers considered that, even if there is no cure, this method of treatment considerably relieves the condition.

Collargol in Surgical Affections.

At a meeting of the Surgical Society of Paris held on April 2nd various members gave their opinion as to the

employment of collargol in surgical affections. M. Reblaud gave it as his opinion that as a local antiseptic in urethro-vesical troubles collargol was very inferior to nitrate of silver, but in uterine infections following upon abortions and in septic pleuritic effusions when surgical intervention alone did not bring about a fall in temperature the association of collargol brought about rapid defervescence. M. Dupuy, in a case of very extensive injury of the rectum, obtained rapid cicatrisation by the use of gauze wicks impregnated with vaseline containing 10 per cent. of collargol.

Hot Air in Surgery.[1]

At the same meeting of the same society M. Bonamy and M. Muller said that since February, 1907, they had been in the habit of applying hot air in surgery at the Gouin Hospital. They had used the treatment in gangrene, both diabetic and traumatic, in ulcerating cancer of the breast, epithelioma of the neck of the uterus, and sundry skin diseases. They showed the patients and the Gaiffe apparatus which they had used. It seems fairly certain that this method is destined to play a considerable therapeutic rôle.

The Treatment of Laryngeal Stenosis by Gutta-percha Bougies.

At a meeting of the Academy of Medicine held on April 10th M. Sieur gave an account of two cases of laryngeal stenosis successfully treated in the following way. After a preliminary laryngostomy the larynx was dilated with gutta-percha bougies gradually increasing in size. The first case, due to the bite of a horse, was cured in 15 days. The second case, in which the stenosis followed an attack of enteric fever, had to be treated for a year but the result was quite successful.

April 20th.

COPENHAGEN.

(FROM OUR OWN CORRESPONDENT.)

The Influence of Light upon Gelatin.

THE therapeutics of the curative and bactericidal properties of light would rest on a firmer foundation if we had more knowledge of the decomposition which the light rays provoke in the chief constituents of the living organism, particularly in the proteids and albuminoids. Great interest was therefore taken in a paper, read at a recent meeting of the Copenhagen Medical Society by Dr. Aage A. Meisling, on his original researches regarding the sensitivity to light of albuminoid substances. The most important results of his investigations on the action of light rays on gelatin were as follows. Pure gelatin is in itself, he found, sensitive to light, so that it is sufficient to expose it for five to ten minutes to a Bang electric arc lamp in order to obtain demonstrable alterations of the gelatin. This sensitivity to light increases very considerably when the gelatin is coloured by certain aniline dyes, for instance, erythrosine, eosine, or auramine, which dyes can be shown to act as catalytic agents. After exposure to light gelatin evidences the presence of formaldehyde. This production of formaldehyde from the gelatin is greatest after exposure to the blue, violet, or ultra-violet rays. The action of light on gelatin may be demonstrated and measured by either physical or chemical methods. To name an instance of the former method, those parts of a pure gelatin plaque that have been exposed to the action of light can be shown to acquire thereby a diminished faculty of water absorption, so that if after the exposure to light the plaque is placed in water prominences arise upon it, being formed at those parts of the plaque from which the light has been excluded. Similarly, very beautiful patterns in relief may be obtained by making the light act through an ordinary photographic negative on a gelatin plaque, sensitised by erythrosine, and afterwards placing the plaque in water. The gelatin acted upon by light will be found also to acquire an altered solubility in water, so that the parts which have not been subjected to light will alone dissolve when the plaque is placed in water, that is to say, the physical action of light on gelatin is a hardening one. One of the chemical changes which take place in illuminated pure gelatin is an oxidation, another the formation of formaldehyde, which has already been mentioned and which explains in a satisfactory way the hardening and coagulation just described. A further peculiar property of illuminated gelatin is its increased power of absorption of colouring matter. When, for instance, a gelatin plaque is placed in a solution of an aniline dye, the parts that have been exposed to light become far more strongly coloured than the rest of the plaque. In this way beautifully coloured copies may be obtained from photographic negatives. Under certain conditions the light produces not only formaldehyde but also hydrogen peroxide in the gelatin: this formation of hydrogen peroxide is due to the presence of sulphuric acid, resinous matter, and other substances, not to the pure gelatin itself. Both formaldehyde and hydrogen peroxide are oxidising agents, though acting in a different way; when acting together they bring about very strong oxidations of an extremely complex nature. With mixtures of formaldehyde and hydrogen peroxide Dr. Meisling has succeeded in obtaining in vitro the same reactions as those that are used for the demonstration of oxydases, wherefore he considers these enzymes to be simply mixtures of the two mentioned chemical bodies. In summing up Dr. Meisling said that in his opinion the chief importance of his investigations might be found in the fact that some of the enigmatical "vital" processes particularly connected with the colloid substances had been shown to follow simple physical and chemical laws. Dr. Th. Madsen and Professor C. J. Salomonsen congratulated the speaker on his important work, which they said would undoubtedly give a new impulse to the chemistry of colloids.

The Vaccine Treatment of Staphylococcic Diseases.

At the same society Dr. Vilh. Jensen read a paper on his experience with the vaccine treatment on Sir Almroth Wright's principles of different staphylococcic diseases. In the treatment of furunculosis the results had been gratifying in the extreme, several very severe cases having been entirely cured. He had also seen good results in some cases of acne vulgaris, in a case of staphylococcic sycosis barbae, and in a case of staphylococcic septicæmia. Two cases of actinomycosis failed to show any improvement, but in both cases the patient was in the last stage of the disease.

April 20th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The Weather and the Visitors.

HARDLY more than a week ago we were wincing under a chill nor'-easter charged with indurated snowflakes—*nevischio*, in Italian parlance, or baby hail-stones—which never fell to the ground, but whirled through the air like the many-tailed whip of the flagellating Furies; and now we are revelling in sunshine just redeemed from sultriness by the zephyr blowing from "the *bijou* Bernese Oberland" rapidly fading from the Apennines. A longer, severer winter has never been followed more suddenly by so delicious a spring, and every interest, urban as well as rural, is enjoying the blessed change. Many a landlord of a hotel, who might have sat for the frontispiece of "Zimmermann on Solitude," has now to give up his own bedroom to the importunate guest, the latter being lucky if he has not to bivouac in the billiard-room or to find a dormitory in the recess of a bow-window! In Florence the new arrival, unless he has secured accommodation by letter, is met by the hall-porter "with hands of wild rejection," and in Rome the caravans of pilgrims, mainly from France, are only saved from camping out in the open by being billeted on private citizens or provided for in temporary holdings improvised in hot haste by the Vatican. Fortunate, indeed, will it be if the heavy sick-list or even death-rate of the last few "Siberian" months is not increased by promiscuous overcrowding in conditions too often suggestive of the "Black Hole of Calcutta"!

The Health of the Queen-Mother.

Disquieting rumours as to the Dowager Queen Margherita have for some time been in circulation, rumours gaining rather than losing in the process of transmission. The facts, I find on inquiry, to be these. Her Majesty is at present suffering from facial neuralgia supervening on influenza—

[1] THE LANCET, March 20th, 1909, p. 877.

neuralgia, moreover, somewhat irresponsive to treatment. The prognosis, however, is quite favourable and the general conditions of the august patient are satisfactorily maintained. The Queen-mother, I am further informed, improves in proportion as she consents to keep not merely to her room but also to bed, in accordance with the advice of Her Majesty's consultants, impressed as they have been with the draughts made on her strength by the anxieties and the exertion consequent on relief work on behalf of the survivors of the earthquake.

The Debate in the Senate on the Earthquake.

An animated, occasionally overheated, discussion on the Government's remissness in aiding the sufferers from the recent earthquake on the Siculo-Calabrian seaboard has just awakened unwonted echoes in the tranquil *ambiente* of the Upper Chamber. A Bill for "Opening an account between the Treasury and the Minister of Public Works to provide for the urgent wants of the communes visited by the telluric storm of Dec. 28th, 1908," evoked from the veteran surgeon, the Senator Francesco Durante, a series of trenchant criticisms on the delays and general inefficiency of the relief work hitherto attempted. A vivid sketch of the cataclysm and its immediate consequences preceded Dr. Durante's impeachment, in the course of which he dwelt on the fact that the wretched survivors of the visitation had to wander throughout all Italy, in island and on mainland, in quest of a hospitality made possible by the subventions of the outlying world. "Charity," continued the Senator, "however great, has its limits, and the *profughi* have now for some time been a prey to misery and privation, in not a few instances breaking out into turbulent protest and forming an element of local unrest and disorder. After three months Messina and Reggio and the townships in their respective provinces are precisely in the same conditions in which they were found on the morrow of the disaster. *Poco si è fatto e quel poco non bene* (little has been done and that little badly)!" He was especially severe on the construction of the *baracche* (huts). "They will not last more than one year, their material being of fir-wood and their site ill-chosen. Better would it have been, *pari passu* with the construction of well-found huts, to proceed actively with the clearing away of the débris of the collapsed quarters, under which there are still many tenements and shops capable of harbouring in comfort and in business no inconsiderable part of the population." A Messinese by birth, the Senator Durante spoke feelingly on a subject near his heart, and when His Excellency Signor Bertolini (Minister of Public Works) attempted to rebut, or at least to minimise, the doctor's criticisms, he was met by the retort that whereas he grounded his statements on the reports of officials themselves inculpated, the criticisms were inspired by experience gathered by impartial eye-witnesses on the spot. "There is also," continued Dr. Durante, "the problem of alimentation to be solved, and I ask, how is a population to live without occupation, industrial or commercial? First of all," he concluded, "clear away the débris, restore the conditions of life impossible in cities composed only of huts. Short of such rehabilitation Messina will never rise again." The veteran consultant's speech made a profound impression on the Upper House and (as reported) throughout the country, confirmed as it is in some important respects by the ocular evidence of visitors, including no less a witness than ex-President Roosevelt.

April 17th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

The Medical Congress at Budapest.

ALTHOUGH the organising committee of the approaching International Medical Congress has not issued any information as to the effect upon the congress in case war should have broken out every Hungarian physician nevertheless has been in great anxiety about the success of the congress should the war really have disturbed it. At present Hungarian medical science is mostly in young hands, which would all have been needed in the battlefield. In Hungary there is compulsory medical service, and every able-bodied man is in the reserve service until his thirty-eighth or fortieth year. This is particularly binding upon medical men, of whom ten times as many as are available would scarcely be sufficient for service in the field. Should war have broken out the congress would have been deprived of half of its native supporters. Now that the situation is happily clear the preparatory committee is working with double diligence. Circulars have been sent to all the provincial medical societies asking them to send representatives to the congress. Town councils have also been asked to send one or two representatives from their medical boards and school physicians; in short, all medical men filling official positions are specially invited to the congress, which promises to be exceptionally well attended. I hope to be able to report the detailed programme of the congress in my next letter.

The Death of Professor Thanhoffer.

The Hungarian medical world is mourning the death of Louis Thanhoffer, the eminent anatomist. He was renowned for his achievements in the domains of pathological and physiological histology. The structure of nerve ganglions and the study of the nerve endings in different organs were the first objects of his study. When only 26 years of age he became professor of histology in the Budapest Veterinary College. He was transferred thence to the University as professor of anatomy and here he has worked incessantly with exceptional devotion. He was a man of great character and as remarkable for his scientific honesty as for his learning and talents. He often quoted as his motto, "*Qui proficit studiis sed deficit moribus, plus deficit quam proficit.*" He was the author of several excellent books, the best one being the "Comparative Physiology and Histology," which was crowned with the Balassa prize and which has been translated into the German and Russian languages. He was born in 1843 and died in his sixty-sixth year after a long and distressing illness. But a few months before his death he received from His Majesty the title of "Adviser to the Court" (Hofrat).

April 10th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The Summer Term at the Medical Faculty of the University and some Figures for the Winter Term.

THE official announcement of the lectures and classes in medical subjects, to be held during the summer term 1909, in Vienna, has just appeared. The term lasts only three months, although it is called semester; it begins during the last week of April and the last lecture will be delivered on or about July 20th. Altogether 406 different classes and courses are announced, against 380 in the summer term, 1908. The number of professors engaged in this work amounts to 33 ordinary, 65 (as against 69 in 1908) extraordinary professors, and 149 (as against 134) *privat-docenten*. The number of ordinary students who attended the medical courses in the winter term, 1908–09, was 1660, amongst them 62 ladies and 385 foreign students, mostly English, American, and Russians. The increase over the previous winter term was about 5 per cent., but the percentage of student taking up medicine in comparison with the total number of students at the Vienna University has remained stationary during about four years; it is 22 per cent. of the grand total, showing that there is little, if any, percentual increase in the study of medicine, and the increase is due to the increase of population. As regards the lectures, some of the more important are as follows: Professor von Noorden on disturbances of metabolism, including gout and diabetes; Professor von Neusser on circulatory disturbances; Professor von Struempell on nervous diseases; Professor von Eiselsberg and Professor Hochenegg on general and special surgery; Professor Fuchs on ophthalmology; Professor Urbantschitsch on general otology; and Professor Chiari on laryngology. Special classes will also be held on otology by Alexander and Barany; on skin diseases by Nobl, Riehl, and Finger; on hæmatology by Schwarz and Türck; on pathology and morbid anatomy by Ghon, Stoerk, and Landsteiner; and sero-therapeutics by Paltauf and Kraus. As a rule, the fees for the courses are not high, £2 2*s.*–£4 4*s.*, according to the duration, mostly from 7 to 10 weeks. Of course, the above-mentioned classes are not the only ones announced.

A Laparotomy as an Object of Art.

Much comment has been raised by a picture, exhibited at

present to the public at Vienna, which shows a noted Vienna surgeon at work, in the act of removing a myoma from the uterus of a middle-aged woman. The surgeon is Professor Wertheim, and his assistants are also well-known Vienna surgeons. The painter, Mr. Adams, an artist of considerable renown, has been much criticised for exhibiting this picture with its, from the public point of view, ghastly details. On the other hand, the surgeon has also been attacked from different quarters for having given consent for exhibition, and has been accused of advertising, although he is above such a suspicion. The defenders of the novel idea of showing a serious operation to a public crowd contend that the famous picture "Anatomy," by Rembrandt, was inspired by the same idea, and that the renowned pictures of battles and shipwrecks are more gruesome and awe-inspiring than this aseptic, unbloody operation. But it must be conceded, even by an impartial surgeon, that the appearance of an incision in the abdomen, through which the contents, or part of them, of the abdomen are visible and protruding, does not belong to a very pleasing class of objects to look at. It is a matter of taste, and the fact that grave demur comes from artistic circles is a sufficient judgment on the matter.

Rupture of the Corpus Cavernosum Penis.

At a recent meeting of the Medical Society Dr. Paschkis showed a patient, aged 29 years, who came to him complaining of pain and swelling of the penis. The organ itself was found on examination to be much enlarged in its circumference at the base, the swelling being caused by extravasation of blood. The patient had tried during maximal erection to turn the penis to the right, and suddenly he felt something at the root of the organ give way, whereupon the swelling appeared and increased rapidly. There was marked tenderness, which, however, only existed along a small area of the left side, just at the base of the cavernous body, and a rupture of this body was diagnosed. An extensive hæmatoma, reaching high up over the pubes and down over the scrotal integument, was present. The only treatment adopted was rest and lead lotion applied every two hours. The swelling soon subsided, and now, six weeks after the incident, the patient shows a small indurated, somewhat tender, nodulated swelling of the base of the left corpus cavernosum. Erections are possible and slightly painful. As regards the etiology, it was contended that at the site of the rupture the condition of the tunica albuginea and of the blood-vessels must have been abnormal, otherwise this small injury could not have caused a tearing of this generally tough and resistant membrane.

April 14th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

The Unrest in Turkey.

THE mutiny of the soldiers which broke out in an unexpected manner on the night of April 13th, and which caused considerable bloodshed, seemed at first to corroborate the view of a large and earnest section of Europeans in Constantinople that the Turks are incapable of grasping their vital and essential responsibilities and of developing a constitutional *régime* on rational lines. Things seemed to be reverting to the old status of absolutism. Now, as I write, there is talk of civil war and talk of peaceful settlement, but the general opinion is that any settlement will be only temporary, and that in the near future new and fiercer conflicts will arise. In the meantime many of the military hospitals are filled with wounded and dying. The local newspapers say that about 60 people were killed, soldiers and civilians included, on the night of April 13th, but this is an under-estimate in order to pacify the excited minds of the population. What increases the anxiety is the uncertainty of the situation. Add to it the pernicious habit of the Greeks of unrestrainedly indulging in shooting at Easter time from all sorts of firearms, and it will be easy to form a fair judgment of the state of disquiet prevailing at present among all classes of the Ottoman metropolis. A good number of tourists have hastily left and some old inhabitants are thinking of following their example. Accidents of a grave and often fatal nature resulting from the indiscriminate use of revolvers by the Greek youth are quite common. The policemen seem to be helpless.

The Ottoman Pharmaceutical Association.

Over 200 pharmacists of Constantinople assembled lately in the premises of the Italian Società Operaia in order to deliberate on some important questions concerning the 35th Article of the Standing Regulations of the Ottoman Pharmaceutical Association. It was unanimously decided at this meeting that the delegates of the pharmaceutists should formulate and submit a new scheme of rules and precepts with regard to the actual status of the association, the rights and duties of its members, and the existing tariff, which is far from being satisfactory. In view also of the doubtful character of the Ottoman law which regulates, or rather ought to regulate, the practice of chemists and druggists, it was thought necessary to appoint a special delegation consisting of the president of the association, El Hadj Hamdi Bey, and Messrs. Irinéu and Husni Bey, to appeal to the authorities in order to bring about a more reasonable application of the law in question. This special delegation or commission will also take the necessary steps to guard the privileges of the association and to abolish the unlawful practices of numerous unscrupulous chemists and druggists, which practices are often prejudicial and even fatal to public health.

Transmitted Tubercle: An Extraordinary Cause of Lupus Vulgaris.[1]

Dr. Grossman, in an article which appeared in *La Pédiatrie en Turquie*, describes the case of a healthy boy, 13 years of age, who suffered from conjunctivitis and whose mother had perforated one lobe of his ear in order that he might be able to wear an ear-ring, which was a reputed charm against all disorders of the eye. The perforation was made with an ordinary needle. The woman, a neighbour, who assisted in performing the operation, made the needle wet with her saliva to facilitate its introduction. Soon afterwards the ear of the boy began to swell and in the course of time the wound degenerated into lupus vulgaris. Inquiries showed that the neighbour who helped the mother to perforate the ear lobe of the boy by wetting it with her saliva had died soon afterwards from tuberculosis of the lungs. The practice of wearing ear-rings as charms against the evil eye or disease is quite common in the Near East. As the needle used for that purpose is almost never properly cleansed and as no antiseptics are ever applied the result is very often infection of the worst type, as in the case now reported.

April 16th.

CHINA.

(FROM OUR OWN CORRESPONDENT.)

The International Opium Commission, Shanghai.

THE main practical utility of this Commission has been to bring together a vast amount of information as to the growth, manufacture, and sale of opium in various countries. Of its resolutions the most important was that in which the Commission declared that it was not constituted in such a manner as to permit the investigation from a scientific point of view of anti-opium remedies and of the properties and effects of opium and its derivatives. It deemed such investigation to be of the highest importance and desired each delegation to recommend this branch of the subject to its own Government for such action as that Government may think necessary. Another resolution strongly recommended each delegation to move its Government to enter into negotiation with China for the prohibition of the trade and manufacture of such anti-opium remedies as contain opium and its derivatives. It is a great pity that stress was not laid, before the Commission assembled, on the importance of having more medical and chemical expert knowledge in the inquiry. It did not require a Commission to tell us that opium smoking is a widespread evil and that China is making some efforts to grapple with it. What is wanted is a consideration of the best methods of suppression. Legal prohibition of the growth or import is not going to succeed. Smuggling is being irresistibly carried on in every other

[1] The case is a corroboration of the paper in THE LANCET of April 17th, by Dr. N. Neild and Dr. E. V. Dunkley.

country (e.g., America, Ceylon, Australia, the Philippines, &c.) where there is a demand for it, and it is so with China. The chief Chinese delegate, Mr. T'ang Kuo-an, proposed:—

"That a committee of five delegates be appointed to consider and report on the medical aspects of the opium question, including the best methods of curing the opium habit without recourse to opium and morphine."

In speaking to this proposal Mr. T'ang Kuo-an said:—

We consider that this question is only second in importance to the suppression of opium in China. We think it would be futile for us to attempt to stop the smoking habit while we continue to use the drug in other ways, such as eating it in the form of pills, &c. Therefore if this Commission is going to justify its existence and is bent on accomplishing results which will be at all satisfactory it is necessary in our opinion that this matter should be fully discussed. To show with what importance the question is regarded by everyone I beg to state that His Britannic Majesty's Minister at Peking has frequently asked our Government what benefit China would derive from restricting the cultivation of opium were the opium evil in other forms (by which he meant the use of opium pills, &c.) to be allowed to be spread all over the Empire.

He added that he begged most earnestly for the coöperation and support of the Commission in favour of his proposal. Unfortunately, owing to the fact that the delegates had no power to exceed their instructions, the Commission was unable to "justify its existence," and this was the rock on which the practical usefulness and the proper aim and object of the Commission were wrecked. An amendment was carried to the effect that the Commission did not include a sufficient number of men competent to deal with the question and emphasised the fact that the Commission was not appointed with a scientific basis. Among the resolutions put forward by the American delegates one was to the effect that "the principle of the total prohibition of the manufacture, distribution, and use of smoking opium is the right principle to be applied to all people—nationals, dependent, or protected"—by each Government. Another resolution stated that "each Government represented is best able to determine what shall be regarded as legitimate medical practice." These did not find favour with the British delegates, who did not see their way, as far as India is concerned, to assent to total prohibition and saw great difficulties in defining what constituted "legitimate medical practice," it being impossible to apply Western medical ethics to a great country like China. It was found during the sittings that the representatives of China were unable to produce trustworthy statistical evidence of the actual extent of the diminution in the production of opium—a fundamental element of the problem of prohibition which will present increasing difficulties. In the inland provinces, which are the greatest opium-producing districts, taxation is irregular and for the most part evaded, and public and official returns are practically unknown. From one of these provinces (Kan-Su in Western China) 3630 piculs more opium found its way down the Yangtze river to Ichang in 1908 than the net import of all foreign opium. A picul is 133 pounds. So much for the work of the Commission, which cannot be said to have been a success, though it has paved the way for a scientific investigation into the best means of eradicating and curing the opium habit.

The Abuse of Opium in America.

As the International Opium Commission owes its inception to America, a few facts concerning the opium evil in that country may be added, from which it will be seen that the United States have a heavy problem of their own to settle. In 1907, 444,121 pounds of crude opium (i.e., for medicinal purposes) and 151,916 pounds of smoking opium were imported. In addition to this it is officially admitted that a large amount is smuggled into the country. The crude opium originates from Smyrna and the Levantine ports, while the islands of Macao and Hong-Kong supply the smoking opium. There are 100,000 to 150,000 smokers among the white and coloured population. Among the general criminal population 15·48 per cent. are smokers, as are 5·62 per cent. of prisoners. An incredible allegation is that 10 per cent. of the medical profession throughout the 25 States are addicts to the use of opium in one form or another. There is an enormous growth of the morphine habit, especially in rural communities. A large percentage of this class have become addicted to the morphine habit largely as the result of a sincere objection to the use of alcohol in any of its forms. From 10 to 20 per cent. of the Chinese population smoke. In every census period in America there has been a per cent. increase in the importation of smoking opium largely in excess of the per cent. increase of the population, and this in spite of the fact that the Chinese population has been practically stationary for 30 years. America intends to do her best to stamp out this growing evil in her midst, and a law has been passed which came into effect on April 1st, 1909, making it unlawful to import smoking opium or opium prepared for smoking, only opium for medicinal purposes being allowed. With regard to her colony in the Philippines, the American authorities have to admit that the ease with which opium is smuggled into the islands makes it impossible to cut off the supply. There never has been any growth in these islands, the chief sources of opium supply being Singapore and Hong-Kong. Of the total number of Chinese residents (55,000) in the Philippines 23 per cent. are registered officially as smokers. Hong-Kong and the Straits Settlements derive a great part of their opium supply from Persia. They take 50 per cent. of the total amount produced annually in that country—viz., 10,000 piculs a year; Europe and Africa take 5 per cent., Great Britain 20 per cent., and the remaining 25 per cent. is for home consumption. The total value of opium exported from Persia is £600,000 per annum. Though opium smoking is not prohibited in Persia, only the lowest classes smoke there.

Peking, March 9th.

Obituary.

THOMAS CRAWFORD HAYES, M.A. T.C. DUB., M.D. DUB., F.R.C.P. LOND.,

EMERITUS PROFESSOR OF OBSTETRIC MEDICINE, KING'S COLLEGE, LONDON; CONSULTING PHYSICIAN-ACCOUCHEUR AND PHYSICIAN FOR DISEASES OF WOMEN, KING'S COLLEGE HOSPITAL; CONSULTING PHYSICIAN FOR DISEASES OF WOMEN, ROYAL FREE HOSPITAL, ETC.

MANY former students of King's College Hospital will have learnt of the death of Dr. Hayes with the deepest regret. It occurred at his residence in Clarges-street, Mayfair, after a long and painful illness. His early studies were conducted in Dublin, where he graduated in Arts, and before leaving was a senior moderator and gold medallist at Trinity College. He entered the medical school at King's College in 1866, when Richard Partridge was teaching anatomy and Lionel Beale held the chair of physiology. It is somewhat curious that before qualifying he had not shown any marked preference for the special branch to which his life later was devoted; his tendency seemed to point rather to medicine than to obstetrics. He was awarded a special certificate in medicine, and after becoming a Licentiate of the Society of Apothecaries, he held office for a year as house physician at King's College Hospital. In the same year he was honorary treasurer of the medical society of the hospital. In 1872 he was elected Sambrooke medical registrar, and later in the year he was appointed assistant physician for diseases of women and children and assistant physician-accoucheur, on the promotion of Dr. W. S. Playfair to the professorship of obstetric medicine. He threw himself into his new duties with characteristic impetuosity, and his class rapidly appreciated the earnest nature of his teaching. Though this was marked by a somewhat dogmatic tone, it was perhaps more impressive than it might have been had he given expression to the different difficulties which so often stimulate further inquiry and research. In these early days he was autocratic in rigidly excluding from his out-patient room all junior students whom he considered were attracted by prurient curiosity rather than by a desire to study, and, it is needless to add, that in this way he was misunderstood by some men. On the other hand, he was unsparing in the time and trouble he devoted to the duties of the maternity department, and was ever ready to come to the rescue when suddenly summoned in cases of difficulty. Always keen on the practical side, he worked for some few years as physician to out-patients at the Evelina Hospital for Sick Children, and subsequently at the General Lying-in Hospital. After 17 years of probation he was appointed lecturer on practical obstetrics at King's College in 1889; a few years later his title was changed to that of professor, and on the resignation of Dr. Playfair he became professor of obstetric medicine and diseases of women. Meanwhile, he had been engaged in similar work at the Royal Free Hospital, and at the time of his death he was a consulting physician of that institution. In 1872 he became a Member of the Royal College of

Physicians of London, and in 1889 he was elected a Fellow, while he was for some time examiner in midwifery at the English Conjoint Board. In 1893 he was made a Fellow of King's College.

Dr. Hayes was of a retiring disposition in every way. He published no signed contributions, but his teaching was always carefully prepared, his delivery good and clear, and his thorough mastery of practical details carried conviction. Like most shy men, he was perhaps too prone to take offence and to imagine some slight or rudeness where none had been intended, but the storm was soon over and he resumed cordial relationship with a charming facility. He was at his best and brightest when surrounded by a sympathetic audience at friendly gatherings of present and former students, when he would pour out a fund of fun and anecdote that seemed to be inexhaustible. For many years he undertook the duties of honorary secretary to the dinner of former students, and his geniality and persuasive charm contributed largely to the success of these gatherings. Had he devoted himself more to literature than to the practical work of his numerous hospital appointments he would no doubt have been more widely known, but it may be doubted whether this would have added in any way to the appreciation of his students, upon whose affection he felt he could rely.

FREDERICK ERNEST WEBB, M.R.C.S. ENG., L.S.A.

THE death is announced of Mr. Frederick Ernest Webb on April 8th at the age of 77 years. He died at his residence, 113, Maida Vale, where for nearly 60 years he and his father had carried on one of the most successful general practices in London. Some weeks ago Mr. Webb had an attack of influenza, and for some time hopes were entertained of his recovery as the more unfavourable symptoms passed away; he, however, sank into a condition of complete unconsciousness, which continued for some time prior to his death. In him has passed away a typical old family doctor, a class which is yearly becoming smaller—men trusted often by two or even three generations of the same family. In him also the medical profession and the cause of medical science have lost an open-handed and practical friend.

Frederick Ernest Webb was a grandson of Thomas Stallad Webb of the Manor House, Coltishall, in Norfolk, a cadet of the old family of Webb of New Sarum, in Wiltshire, and was the only son of the late Thomas Ernest Webb and his wife Eleanor, the second daughter of the late John Venn of Highbury Park. His father, prior to his settling down in Maida Vale about the year 1850, carried on a large practice at Bungay in Suffolk, and there his son was born on August 28th, 1831. After being educated privately by the rector of a neighbouring parish, he passed some time with his father, and then, at an early age, he entered as a pupil at the Norwich Hospital, where the late Mr. Cadge, who was a connexion, was then the chief surgeon. There he passed two years, gaining much useful surgical knowledge; he was for at least a year the only pupil and had the whole of the surgical dressings to apply. From Norwich he proceeded to St. George's Hospital, the school of which he entered on his father settling in practice in Maida Vale. He completed his course of hospital study in 1854, and in that year he was enrolled a Member of the Royal College of Surgeons of England. In the following year he proceeded L.M. at the College and took out the Licence of the Apothecaries' Hall.

On obtaining his first qualification, in 1854, he at once joined his father in practice and with him he worked until their partnership was dissolved a few years before the elder partner's death, which occurred at the age of 74 years in the August of 1875. The years which followed the termination of his partnership with his father were the most strenuous of his life; although a general practitioner, he was also a surgeon and gynæcologist, undertaking often the most serious operations. His practice grew until it became one of the largest and most lucrative of the general practices in the West-end of London. Mr. Webb, when in his prime, would often after a busy day take a night journey to see some wealthy patient in the country. He often said that he never lost the confidence of a patient, and the regard in which he was held is exemplified by the circumstance that although he was for the last years of his life almost only a nominal partner in the firm of "Webb, Walker, and Adams," yet to within a short time of his death he saw some of these old patients professionally, so that he can be said to have died in harness. One of his chief friends in the days when he was working alone and at high pressure was the late Sir William Jenner, and by his advice it was that he took Mr. J. R. Walker as a partner, while some years later a third partner was taken into the firm, Dr. G. E. D'Arcy Adams.

In his busy and successful life Mr. Webb gave much of his time to the cause of charity. He was for many years honorary medical officer to the Home for Female Orphans in St. John's Wood and to the Hospital and Home for Incurable Children in Maida Vale (now located at Hampstead). On retiring from active work at the latter institution he was appointed consulting medical officer and he presented a sum of money to endow a bed in perpetuity. Of the former institution he was for long one of the vice-presidents. In March, 1901, he gave a donation of £1000 to the charity, which sum the governors invested and called the Webb Presentation Fund "in gratitude for Mr. Webb's many acts of kindness and valuable services to the institution for 36 years." Mr. Webb was always devoted to his hospital and school, St. George's, and had among its staff many old and tried friends. Ever delighting at the progress which had been made during his long life in the science of medicine, and in order to encourage the younger men, early in 1895 he presented to the medical school the sum of £1000 to found an annual prize in bacteriology to foster work in the new science which he saw meant so much to suffering humanity.

Apart from his professional life and public sympathies, Mr. Webb possessed a charming personality. He was very well known as an accomplished amateur musician; he played the violin, piano, and organ and was for long a member of the Royal Amateur Orchestral Society, of which the late Duke of Saxe-Coburg, as Duke of Edinburgh, was a member. Mr. Webb was the possessor of some very fine old violins and of a viola which had been given to his grandfather, Thomas Stallad Webb, by King George III. He also possessed considerable judgment in artistic matters; he counted some of the great artists of the day among his friends and patients, and in his house are fine examples of their work. His home in Maida Vale was ever a centre of hospitality and the dinners, at which he entertained his professional friends, were delightful reunions. At these dinners there gathered round his table, among other friends, Sir James Paget, Sir William Jenner, Sir Joseph Fayrer, and Sir William Broadbent, and sometimes Frank Buckland, who had been his host's friend since his boyhood, and who added much to the enjoyment by his wit and utter disregard of the conventionalities of life. Frederick Webb was from his boyhood a keen sportsman and a first-class small-game shot; every year he passed a portion of the autumn and as many week-ends as he could spare either at a shooting which he rented near Berkhamsted, or in later life in Sussex, where for many years he rented a house called Loxwood and some very good shooting. He was also a fair billiard player, and during his latter years, when he could no longer see well enough to shoot, he devoted some hours each day to the game, either at the Constitutional or more often at the Oriental Club, of both of which he was for many years a member. This pastime was interrupted by the formation of double cataract a few years ago, but both eyes were most successfully operated on by Mr. H. E. Juler, and he was able, much to his joy, to resume his recreation at his clubs.

He married on August 28th, 1860, at St. Saviour's Church, Paddington, Mary Anne, only daughter of the late Mr. John Grafton, C.E., of Blomfield-crescent, W. He has left a widow, two daughters and a sister, Mrs. Thomas Fuller of Rugby, to mourn his death. He was buried on the morning of Tuesday, April 13th, at Highgate Cemetery; his cousin, the Rev. William P. Webb, M.A., rector of Ashwell, Herts, read the chief part of the service, in which Canon Duckworth and Canon Syers also officiated.

EDWARD RECKITT, M.D. ST. AND., M.R.C.S. ENG., L.S.A.

ON March 24th last Edward Reckitt, one of the few remaining pupils of Sharpey and Liston, died at his residence, Beech House, Wainfleet, Lincolnshire, in his eighty-eighth year. He commenced the study of medicine in 1840 as a pupil of the elder Dr. Lunn of Hull, attending at the same time the lectures of the Hull School of Medicine and the practice of Hull General Infirmary from 1843 to 1845. In the latter year he

proceeded to University College, London, attracted thither by the fame of Liston, and continued his studies there until 1846, when he qualified as M.R.C.S. Eng. and L.S.A. Whilst at University College Hospital he dressed for Liston and was ever afterwards a great admirer of that renowned surgeon. After qualifying at the age of 25 years, Reckitt returned to Hull, where his father and other members of the family, including his cousin Sir James Reckitt, the present head of the family, resided. Starting in general practice, he soon obtained a firm footing and was appointed lecturer on botany at the Hull School of Medicine and surgeon to the Hull and Sculcoates Dispensary. Under the stress of hard work his health gave way and in 1856 he purchased the practice of Dr. Kirkham Burton of Wainfleet, and here he continued to work for 40 years, retiring in 1896 after an attack of cerebral thrombosis resulting in partial paralysis of the right arm and leg, from which he never entirely recovered. Whilst in practice at Wainfleet he enjoyed the confidence of his patients to a remarkable degree. He rarely took a holiday. Particularly fond of surgical work, he necessarily performed many severe operations, and much of this work was done single-handed or with the help of only an untrained nurse. Called on one occasion to a case of wounded palmar arch, caused by the bursting of a shot gun and in which recurrent hæmorrhage supervened, he ligatured the brachial late at night by the light of lamp, single-handed and without the aid of an anæsthetic. His self-reliance and courage in emergencies—qualities so often needed in the life of the busy country surgeon—were marked characteristics in his work, and equally so his sound common sense and tact in dealing with those who sought his advice. For nearly 40 years he held the appointment of medical officer of the Wainfleet district of the Spilsby Union and surgeon to the coastguard. He was also for many years president of the Literary Institution. His fatal illness was of short duration, as he was out as usual until March 14th, when he caught a chill. Bronchitis resulted and he slowly sank from exhaustion, conscious almost to the last of the presence of those members of his family who could be with him. He died in the house in which he was born and which had been the home of his grandfather more than a century before. He leaves three sons, all of the medical profession—Dr. E. B. Reckitt of Boston, Lincolnshire; Lieutenant-Colonel J. D. T. Reckitt, late of the Royal Army Medical Corps and now staff officer to the A.M.O. 1st London Division T.F.; and Mr. W. F. Reckitt of London.

HENRY STILWELL, M.D. EDIN., M.R.C.S. ENG., L.S.A.

THE death is announced of Dr. Henry Stilwell, which took place at Eastbourne on April 12th, at the age of 73 years. He was a son of the late Mr. James Stilwell, F.R.C.S., of Uxbridge. Educated at Rugby, he entered the medical profession by apprenticeship to his father. He became later a student at St. Bartholomew's Hospital on Oct. 1st, 1853, and proceeded to Edinburgh to attend the lectures and complete his studies. He was admitted a Member of the Royal College of Surgeons of England and a Licentiate of the Society of Apothecaries in 1857, taking the degree of Doctor of Medicine at the University of Edinburgh in the same year, at the early age of 21 years. After a voyage to Australia he was called upon to assist his father in general practice for two years in his native town, but relinquished it to join his cousin in the management of the asylum in that district. At Moorcroft, Hillingdon, he spent the greater portion of his life, having acted as medical superintendent of that institution for 45 years. He retired in 1906 to live at Eastbourne, where he died after a short illness.

Dr. Stilwell was a man of sterling qualities and a good specimen of the English country gentleman—a man of wide culture and with varied interests in life. In the "seventies" and "eighties" he was a well-known figure in the hunting field. In later years he had taken to golf as a recreation. Until recently he was a regular attendant at the St. Bartholomew's Hospital decennial dinners and at the dinners of the Edinburgh University Club, and was known to a wide circle of medical friends. Of a somewhat reserved disposition, he did not often enter into discussions at the ordinary medical societies, but he was an old and valued member of the Medico-Psychological Association, which he joined in 1862. He was also a frequent attendant at the metropolitan meetings of the British Medical Association. For years he was the local secretary of the Epsom College Benevolent Fund, in which he took a great interest. In his own special department his opinion was sound and practical. Those who have been closely associated with him learnt much from him and found that under the cloak of his somewhat austere manner was concealed one of the kindest hearts. He had also a fund of humour about him and was able to tell a good story.

Feeling the responsibility of his position in the care of the insane he entered into the lives of his patients and by his example induced others to do their utmost to promote their recovery. He was much liked by his patients and respected by all who knew him. Dr. Stilwell leaves a widow, a son, and three daughters to mourn their loss. The funeral took place at Hillingdon on April 16th in the presence of his son and sons-in-law, and many others.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Georg Schuldheis, formerly *docent* of psychiatry in the University of Upsala.—Dr. Dillon Brown, professor of children's diseases in the University of Vermont.—Dr. Pedro Almeida Magalhães, professor of medical pathology in the University of Rio de Janeiro.—Dr. Granier, a well-known and very popular medical councillor in Berlin.—Dr. A. Friedlowsky of Vienna, a former prosector under the eminent professor of anatomy, Dr. Hyrtl. His age was 74.—Dr. E. Kufferath, professor of clinical midwifery in the University of Brussels.—Dr. V. F. Voskressenski, professor of clinical surgery in the University of Kharkoff.—Dr. Karl Hotz, formerly professor of ophthalmology in the Rush Medical College, Chicago.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the quarterly examination in Practical Pharmacy held on April 15th, the following gentlemen were approved:—

Harold Ernest Bloxsome, Durham University and St. Bartholomew's Hospital; Algernon Edgar Percy Cheesman, Guy's Hospital and private study; William Noel Child, M.A. Cantab., Cambridge University and St. Thomas's Hospital; John Stanley Cocks, Guy's Hospital; Anthony Dias, St. George's Hospital; Stephen Ormond Dolan, Leeds University; Thomas Hugh Edey, Guy's Hospital; Aubrey Scott Gillett, King's College Hospital; Arthur Noel Hodges, B.A. Cantab., Cambridge University and London Hospital; Herbert Arnold Lake, M.R.C.V.S., University College Hospital; John Rhodes Liddell, Sheffield University; Adolph Richard Niell MacGillycuddy, University College Hospital; Philip Stanley Martin, University College Hospital; Gerald Woffindin Maw, private study; Thomas Alexander Milroy, Glasgow University; John Francis O'Malley, L.R.C.P.I., L.R.C.S.I., L.M. Dublin, of Middlesex Hospital; Basil Raymond Clinton Palmer, St. Mary's Hospital; Albert Pfeiffer, Middlesex Hospital; Robert Bradley Roe, St. George's Hospital; Archer Ryland, St. Bartholomew's Hospital; Ralph Martin Soames, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Aubrey Dean Vernon-Taylor, Guy's Hospital; Percy Boyd Wallis, Cambridge University and St. Bartholomew's Hospital; John Murray Weddell, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Arthur Donald John Bedward Williams, B.A. Cantab., Cambridge University and Guy's Hospital; and Leslie Douglas Wright, Guy's Hospital.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bologna:* Dr. Gino Norsa and Dr. Giuseppe Poggi have been recognised as *privat-docenten* of Internal Pathology.—*Bonn:* Dr. Karl Vogel, *privat-docent* of Surgery, has been granted the title of Professor.—*Breslau:* Dr. Bruck has been appointed Chief Medical Officer of the Dermatological Clinic in place of Professor Zieler who goes to Würzburg.—*Cornell:* Dr. Graham Lusk, of the University and Bellevue Hospital Medical College, has been appointed to the chair of Physiology.—*Cracow:* Dr. Stanislaus Anton Braun, *privat-docent* of Midwifery and Gynæcology, has been granted the title of Extraordinary Professor.—*Freiburg:* Dr. K. Gauss has been recognised as *privat-docent* of Gynæcology and Midwifery.—*Halle:* Dr. Richard Freund, *privat-docent* of Gynæcology, has been granted the title of Professor.—*Harvard:* Dr. Charles V. Chapin has been appointed Lecturer on Hygiene.—*Heidelberg:* Dr. Arnsperger, *privat-docent* of Medicine, has been granted the title of Professor.—*Königsberg:* Dr. Walter Kruse of Bonn has been appointed Professor

of Hygiene in succession to Dr. Pfeiffer.—*Moscow:* Dr. N. J. Pobiêdinski, *privat-docent* of Midwifery and Gynæcology, has been appointed Extraordinary Professor.—*Naples:* Dr. Pio Marfiori of Padua has been appointed Professor of Materia Medica and Experimental Pharmacology.—*Prague (Bohemian University):* Dr. Julius Petrivalsky and Dr. Josef Znojemski have been recognised as *privat-docenten* of Surgery.—*Rome:* Dr. Luigi Tomellini has been recognised as *privat-docent* of Forensic Medicine.—*Vienna:* Dr. Alfred Exner has been recognised as *privat-docent* of Surgery.—*Würzburg:* Dr. Karl Zieler of Breslau has been appointed Extraordinary Professor of Dermatology.

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON).—A course of eight lectures on the Experimental Evidence relating to Variation and Heredity and its bearing upon the Problems of Evolution will be delivered by Mr. George P. Mudge, lecturer on biology, commencing on Tuesday, May 4th, and following Tuesdays at 10.30 A.M. The lectures will be delivered in the Biological Theatre of the college. All students of the University are free to attend. Members of the profession will be admitted on presentation of their address cards.

THE ROYAL NATIONAL ORTHOPÆDIC HOSPITAL.—On April 20th H.R.H. Princess Alexander of Teck opened the new out-patient department and nurses' home for 50 nurses in connexion with the Royal National Orthopædic Hospital in Marylebone. The hospital, which has entrances in Bolsover-street and Euston-road, is the outcome of the amalgamation of the late National Orthopædic Hospital, Great Portland-street, upon the site of which the new hospital is in course of erection, with the Royal Orthopædic Hospital, Oxford-street, and the City Orthopædic Hospital, Hatton Garden. The in-patients of these institutions are at present housed in Charing Cross Hospital, but the Royal National Orthopædic Hospital will, when completed, contain 213 beds for their reception. King Edward's Hospital Fund has granted £10,000 towards the new buildings, besides an annual contribution of £2000.

THE SEASIDE CAMPS FOR LONDON WORKING BOYS.—An admirable association every year sends away to a seaside camp for a week or fortnight's holiday a large number of London working boys. The camp is held at Bexhill, and last year as many as 2917 lads were sent away, that number being 400 in excess of the number sent in 1907. The amount of good done by this society is undoubtedly very great. Were it not for the camps organised by this and other institutions many a lad would spend his holiday in loafing about the streets from sheer inability to afford the expense of getting out of town. And besides the physical advantages of good food and clean air which the camp affords, there is also the inestimable benefit of being under discipline, an advantage which the working lad, compared with the boy of the upper classes, seldom gets. The latter when he goes to a public school finds himself under a discipline which is most beneficial. He learns at first that he is not as good as or better than anyone else, but that he is quite inferior. As he gets older he finds that he is improving and finally, having served, he learns to rule. But a board school education does not teach this. Seaside camps, then, are a valuable method of training and deserve all support. Every boy who is admitted has to contribute according to his means towards expenses, but of course that is of necessity only a small part of the actual cost. Contributions may be sent to the secretary, Mr. P. Abel Bloxham, 23, Northumberland-avenue, London, W.C., or to Messrs. Cocks, Biddulph, and Co., 43, Charing Cross, London, W.C.

PORTHCAWL REST.—While on the north coast of Wales there are several well-equipped convalescent homes, there is only one, that at Porthcawl, in the southern counties of the Principality. The reason for this is, no doubt, to be found in the fact that whereas the majority of those who make use of the northern institutions come from the midland counties of England, even as far distant as Birmingham, the number of persons who go to the Porthcawl Rest from the English counties is very small indeed. In 1908, of the 1335 patients treated there only 27 came from outside South Wales. The Rest was founded in the year 1878, when 33 patients were admitted, and year by year it has been necessary to find accommodation for an increasing number. So popular indeed has the institution become that the managing committee has had to make a rule that except in special circumstances a patient cannot be admitted who has been in the Rest during either of the two previous years. Before this rule was made a large number of "annual visitors" kept out urgent convalescent cases or those who had never been in the home before. The institution is managed upon very economical lines, for the weekly cost per patient during 1908 averaged only 10*s.* 9*d.*, and the cost of food, fuel, and washing was less than 7*s.* per patient weekly. Enlargements are now being carried out at a cost of some £9000, towards which sum all but £2500 have been subscribed, but with such a record of useful service there ought to be no difficulty in securing that amount.

HOSPITAL SATURDAY FUND.—The annual public meeting in support of the Hospital Saturday Fund was held at the Mansion House on April 17th, Sir Savile Crossley being in the chair in the absence of the Lord Mayor. The chairman said that "records" had been achieved during the past year in the amounts collected and distributed and in the reductions of working expenses. The income of the Hospital Saturday Fund last year was £29,830, of which 199 London firms had each collected £25 or upwards. He suggested that some of the 200 empty hospital beds in London might be opened to paying patients. Canon Horsley moved the adoption of the report, which was seconded by the Mayor of Finsbury and carried. Dr. T. D. Acland proposed a resolution approving the measures taken for the prevention and treatment of tuberculosis by the Hospital Saturday Fund, which had devoted a sixth of its income to those objects. He urged upon the supporters of the Fund the importance of giving advanced cases of the disease a place of refuge apart from the Poor-law institutions. Dr. A. P. Gibbons, in seconding, remarked that the Government should be more active in inspecting meat and dairies, and Dr. T. Gambier also supported the resolution, which was carried.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—The annual provincial meeting of this society will be held at Torquay on Saturday, May 8th, at 4.30 P.M. A reserved corridor carriage will leave Paddington station on the 11.50 train. Owing to the exertions of members of the council residing at Torquay and of the medical profession of Torquay excellent arrangements of an inexpensive character have been made for the reception of Fellows and guests at the Grand Hotel. An attractive programme has been arranged for the following day, when members will have the opportunity of visiting the South Devon Moors or of playing golf at Stover. Fellows may bring ladies of their family as guests and are also allowed to bring medical guests, for whom the hotel expenses will be charged at the same rate as for the Fellows—namely, one guinea each from Saturday afternoon to Monday morning, including all meals (excepting lunch on Sunday). It is anticipated that there will be a very large gathering of Fellows, and they are requested to communicate with one of the honorary secretaries, Dr. S. Sunderland, '11, Cavendish-place, London, W., and Dr. F. A. de T. Mouillot, Eton House, Harrogate, at once as to the probability of their being present, and to give notice to the hotel if they wish to take advantage of the inclusive terms already mentioned.

SANITARY ASSURANCE ASSOCIATION.—The twenty-eighth annual meeting of the Sanitary Assurance Association was held on April 19th at the offices, 7, Pall Mall, the President, Mr. Walter Butler, M.Inst.C.E., being in the chair, who congratulated the association on the satisfactory report submitted by the council. They had felt it their duty to criticise the sanitary arrangements at the Franco-British Exhibition, and efforts were made to obtain a sanitary section, though without success. But the association itself exhibited plans, illustrative of its work, for which the international committee of judges had awarded a gold medal. On the subject of the exhibition the report said: "The authorities were slow to admit that the sanitary arrangements were other than satisfactory, but thanks to the *Times*, THE LANCET, and other papers, the sanitary condition of the exhibition continued to be the subject of much criticism up to its close, and some improvements were made, though they were far from adequate. The President of the Local Government Board himself looked into the matter and promised in the House

of Commons that he would not lose sight of the subject. It may be reasonably hoped that adequate lavatory accommodation will be provided in future exhibitions." The chairman proposed the adoption of the report, which was seconded by Sir William Chance, and carried unanimously. Mr. Mark H. Judge proposed, and Mr. F. A. Gane seconded, the re-election of Sir William Chance and Dr. Hugh Roger-Smith as members of the council, which was carried.

INSTITUTE OF CHEMISTRY.—In the March and April examination in the chemistry of food and drugs, and of water, the following passed: T. Cockburn, C. E. C. Ferrey, P. A. W. Self, B.Sc. Lond., and F. F. Shelley.

THE London County Council has resolved and ordered that Section 55 of the Public Health (London) Act, 1891, with respect to the notification of infectious disease, shall apply, in the Administrative County of London, to the diseases known as glanders, anthrax, and hydrophobia in man. The Order, which has been duly approved by the Local Government Board, will come into operation as from and including April 26th.

PRESENTATION TO A MEDICAL PRACTITIONER.—Mr. T. Torkington Blease, M.R.C.S. Eng., L.S.A., who is the medical officer to several societies to which he was appointed 52 years ago, has recently resigned his appointment as medical adviser to the Great Central Railway Company's Provident Society (Altrincham District) after 45 years' service. As a mark of their esteem for Mr. Blease the members of the society have presented him with an illuminated address.

THE LATIN-AMERICAN MEDICAL CONGRESS.—During the month of January a meeting was held in the buildings of the National University of Asuncion. The meeting was composed of medical men and had been called by Dr. William Stewart for the purpose of forming a national committee to deal with the best way of making known the forthcoming Latin-American Medical Congress and the International Hygiene Exhibition which is to form an annex thereto, so that Paraguay might take a worthy part therein. The congress will be held in Rio de Janeiro throughout the first week of August. The Paraguay committee will be constituted as follows:—President: Dr. William Stewart. Vice-President: Dr. Juan B. Benza. Secretary: Dr. Manuel Perez. Members: Dr. Fernando Garitti, Dr. Cayetano Masi, Dr. Luis Zanotti Cavazzoni, Dr. Justo P. Vera, and Dr. Eduardo A. Romero y Bartolomé Coronel. These congresses, which are held every two years, are attaining great proportions and are awakening an interest which is a stimulant to the progress of the medical sciences in Latin-American countries. The first congress was held in Santiago, the second in Buenos Ayres, the third in Montevideo, and the fourth, as mentioned above, is to be held in Rio de Janeiro.

UNIVERSITY OF OXFORD.—The Master and Fellows of University College, upon the report of the examiners, have awarded the Radcliffe Prize for 1909 to Arthur F. Hertz, D.M., Magdalen College, assistant physician, Guy's Hospital, for his dissertation upon "The Physiology and Pathology of the Movements of the Intestines." The College desires to call attention to a statement in the report of the examiners to the effect that original work, in each case fully worthy of the prize, was submitted by the following candidates: Alexander G. Gibson, D.M., Christ Church; and Arthur C. Inman, B.M., M.A., Wadham College. The next award of the prize will be in 1911.—At a meeting of the Radcliffe electors Martin William Flack, B.M., M.A., Keble College, demonstrator in Physiology at the London Hospital, was elected to a Fellowship under the trust on the report of the examiners.—The summer dinner of the Oxford Graduates' Medical Club will take place on Thursday, May 20th, at the Hotel Cecil. The chair will be taken by the President, Sir W. S. Church, Bart., K.C.B., and among the guests who have accepted the club's invitation to attend are: The Chancellor of the University, the Master of University College, the Rector of Lincoln College, the Provost of Queen's College, and the two University Members of Parliament.—Six lectures on the History of Greek Medicine up to the age of Hippocrates will be delivered at the Examination Schools by Joseph F. Payne, D.M., Hon. Fellow of Magdalen College, on Wednesdays and Fridays at 5.45 P.M. beginning on May 5th.

ASSOCIATION OF MEDICAL MEN RECEIVING RESIDENT PATIENTS.—The annual general meeting of this association was held on April 14th at 26, Bryanston-street, W., Dr. T. Whitehead Reid in the chair. Dr. G. E. J. Crallan was elected President for the ensuing year, and Dr. Dove, Dr. Haynes, Dr. Still, Dr. Reid, and Dr. Walsh, Vice-Presidents. The annual report presented by the secretary was read and received. It showed a very satisfactory increase in the work of the association, the number of patients placed being nearly double that of 1907. The demand for membership, however, was shown to continue to be higher than is commensurate with the applications received from patients. The report showed that in spite of this encouraging evidence the association was far from receiving the support which it deserves at the hands of the profession as being an organisation of medical men formed for the purpose and established on the principles of self-help and mutual support; also that it had nothing in common with commercial agencies, as any profits made became the property of the association as a whole. The financial position which enabled the subscriptions to be lowered last year shows that in spite of this fact, and with increased advertising and clerical expenses, the balance brought over at the end of 1908 was almost double that of 1907. Votes of thanks to the chairman and honorary secretary brought the meeting to a close.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The End of the Easter Holidays.

THE House of Commons resumed on Monday, April 19th, after the Easter holidays. However, for the first two days after the resumption of business the proceedings were very quiet. The number of questions on the notice paper was small and none of them attracted much interest. It was the middle of the week before the normal Parliamentary activity was reached, as Members wherever possible prolonged their holidays for a day or two. The House of Lords resumed on Tuesday, April 20th.

Asylum Officers' Superannuation Bill.

A Select Committee of the House of Commons to take evidence bearing on the Asylums Officers' Superannuation Bill has been nominated. It consists of Sir WILLIAM COLLINS, Mr. HAZLETON, Mr. JOHN HENDERSON, Mr. HORNIMAN, Mr. W. PRIESTLEY, Mr. T. F. RICHARDS, Mr. ROCH, Mr. STANIER, and Sir JOHN BATTY TUKE.

Street Accidents Caused by Vehicles.

The return showing for England and Wales the number of accidents resulting in death or personal injury known to the police to have been caused in streets, roads, or public places by vehicles during the period from May 1st to Dec. 31st, 1908, is detailed and elaborate. The grand total of these accidents is 17,973, of which 746 had a fatal termination. Motor-cars and motor cycles were responsible for 4499 accidents, of which 198 proved fatal. Motor omnibuses caused 1156 accidents, of which 50 resulted in death.

Deaths of Infants in Poor-law Institutions.

A memorandum by the Local Government Board on deaths among infants in Poor-law institutions has been submitted to the House of Commons. The general conclusion of the memorandum is that all the information in the possession of the department goes to show that, with exceptions which are comparatively few and decreasing, the condition of the Poor-law maternity wards is satisfactory, and that as regards the young children one of the most striking features of the ordinary Poor-law nursery is the healthy appearance of the "permanent" children as compared with the newcomers.

The Medical Acts Amendment Bill.

Opposition will be offered to the Medical Acts Amendment Bill if an attempt is made by Mr. COOPER to obtain a second reading for his measure. Six motions for the rejection of the Bill have been put down on the order paper. These motions stand in the names of Mr. JOYNSON-HICKS, Mr. WILES, Mr. ESSEX, Sir HENRY KIMBER, Sir HENRY COTTON, and Mr. GEORGE GIBBS.

HOUSE OF COMMONS.

WEDNESDAY, APRIL 21ST.

The Return of Tuberculous Patients from Canada.

Mr. WEIR asked the President of the Board of Trade whether, having regard to the fact that under Canadian law emigrants from this country who developed consumption within two years after arrival in Canada were required to return, he was now in a position to state what precautions had been taken by steamship companies, in vessels sailing from Canadian ports to the United Kingdom, to isolate consumptive passengers in such a way as to prevent other passengers running the risk of infection.—Mr. CHURCHILL replied: The steamship companies inform me that persons returning from Canada on account of consumption are carefully isolated during the voyage and kept apart from the other passengers.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

ELLIS, L. ERASMUS, M.R.C.S., L.R.C.P. Lond., has been appointed Chairman of the Leicester Board of Guardians.

FELLS, ARTHUR, M.B., C.M. Edin., has been appointed a Clinical Assistant at the Bristol Eye Dispensary.

FLEMING, JAMES FINLAYSON, M.B., B.S. Glasg., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for the Sheriffdom of Fife and Kinross, and to be attached more particularly to the Dunfermline and Kinross District.

FOWLER, THOMAS WEBB, M.D. Birm., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 20, and to be attached more particularly to Coventry County Court.

FRENCH, MARGARET DOUGLAS, M.B., B.S. Durh., has been appointed Junior Assistant Medical Officer at the North Riding Asylum, Clifton, York.

GRIMBLY, RICHARD HENRY, M.R.C.S., L.S.A., has been appointed Medical Officer for the Ipplepen District, by the Newton Abbot (Devon) Board of Guardians, for three years.

HOWDEN, IAN DALRYMPLE CLARK, M.D. Edin., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 49, and to be attached more particularly to Dover, Folkestone, Hythe, Romney, Deal and Sandwich County Courts.

ROBERTS, WALTER R. S., M.B., Ch.B. Birm., has been appointed Medical Officer of Health for the Ongar Rural District Council.

SQUIRE, E. W., M.B., B.S. Lond., has been appointed House Surgeon to the *Dreadnought* Hospital, Greenwich.

STEVENSON, T. H. C., M.D. State Med. Lond., M.B., B.S. Lond., D.P.H. Cantab., has been appointed Superintendent of Statistics of the General Register Office, Somerset House.

THOMAS, FRANK LESLIE, M.B., B.S. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Ophthalmic Surgeon to the North Devon Infirmary, Barnstaple.

WILLETT, JAMES H., M.D. Liverp., Ch.B. Vict., has been appointed Honorary District Medical Officer of No. 7 District of the Liverpool Maternity Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ASHTON-UNDER-LYNE DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Assistant House Surgeon. Salary £90 per annum, with board, &c.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES, John Bright-street, Birmingham.—Clinical Assistant. Salary at rate of 52 guineas per annum.

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer. Also Resident Surgical Officer. Salary in each case £80 per annum, with board, washing, and attendance.

BIRMINGHAM INFIRMARY.—Assistant Resident Medical Officer. Salary £104 per annum, with apartments, rations, &c.

BURY INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, residence, and attendance.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 per annum, with board and lodging.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board, residence, &c.

CROYDON GENERAL HOSPITAL.—Medical Officer for Diseases of the Ear, Nose, and Throat.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon. Salary £60 per annum, with residence, board, and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Surgeon. Salary at rate of £75 per annum, with board, residence, &c. Also Second Medical Officer for six months. Salary at rate of £40 per annum, with luncheon and tea.

ECCLES AND PATRICROFT HOSPITAL.—House Surgeon, unmarried. Salary £60 per annum, with board and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, London, S.E.—House Physician for nine months. Salary at rate of £60 per annum, with board, residence, and washing.

FARRINGDON GENERAL DISPENSARY AND LYING-IN CHARITY, 17, Bartlett's Buildings, Holborn-circus, E.C.—Resident Medical Officer. Salary £100 per annum, with rooms, attendance, fire, and lighting.

FOLKESTONE, VICTORIA HOSPITAL.—House Surgeon. Salary £100 per annum, with board, residence, and laundry.

HOLLAND (LINCS.) COUNTY COUNCIL EDUCATION COMMITTEE.—School Medical Officer. Salary £250 per annum, with travelling allowance.

HUDDERSFIELD INFIRMARY.—House Surgeon. Also Junior House Surgeon. Salaries £100 and £80 per annum respectively, with board, lodging, and washing.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Senior House Surgeon. Salary £100 per annum, with residence, board, and washing.

IPSWICH, EAST SUFFOLK AND IPSWICH HOSPITAL.—Two House Surgeons. Salary at rate of £65 per annum.

ITALIAN HOSPITAL, Queen-square, London, W.C.—House Surgeon for six months. Salary at rate of £60 per annum, with board and residence.

JERSEY GENERAL DISPENSARY AND INFIRMARY.—Resident Medical Officer. Salary £100, with board and lodging.

LEICESTER INFIRMARY.—Assistant House Physician for six months. Salary at rate of £60 per annum, with board, apartments, and washing.

LINCOLN MENTAL HOSPITAL, The Lawn, Lincoln.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, &c.

LIVERPOOL DISPENSARIES.—Assistant Surgeon, unmarried. Salary £100 per annum, with board and apartments.

MIDDLESEX COUNTY ASYLUM, Napsbury, near St. Albans.—Fourth Assistant Medical Officer. Salary £160 per annum, with apartments, board, washing, and attendance.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead.—Junior Resident Medical Officer. Salary £50 per annum, with board and residence.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with board, lodging, and washing.

PORTSMOUTH WORKHOUSE INFIRMARY.—Second Assistant Resident Medical Officer. Salary at rate of £100 per annum, with apartments, rations, &c.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—House Surgeon, House Physician, Junior House Surgeon, and Junior House Physician, all for six months. Salary of two former at rate of £75 per annum, and of two latter at rate of £40 per annum, with residence, board, and laundry.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Medical Officer in Charge of Electrical Department. Salary £50 per annum.

ROYAL NAVAL MEDICAL SERVICE.—Examination for 15 Commissions.

SEAMEN'S HOSPITAL SOCIETY, Greenwich.—Two House Physicians. Salary £50 per annum, with board, residence, and washing.

SHEFFIELD ROYAL HOSPITAL.—Aural Surgeon, Medical Officer to the Electrical Department, and Assistant Physician for Out-patients.

SOCIETY OF APOTHECARIES OF LONDON.—Examiner in Surgery.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. Salary £100 per annum, with rooms, board, and washing.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill.—Junior House Surgeon. Salary £50 per annum, with board, apartments, and washing.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon for six months. Salary £30, with board and lodging.

WAKEFIELD, CLAYTON HOSPITAL.—Junior House Surgeon, unmarried. Salary £80 per annum, with board, lodging, and washing.

WAKEFIELD, WEST RIDING ASYLUM.—Assistant Medical Officer as Locum Tenens. Salary £3 3s. per week, with apartments and board.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Physician. Also Assistant Physician.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £130 per annum, with board, lodging, and attendance.

YORKSHIRE, WEST RIDING COUNTY COUNCIL.—Medical Inspector of School Children. Salary £300 per annum and expenses.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Market Bosworth, in the county of Leicester; at Carney, in the county of Sligo; and at Spennymoor, in the county of Durham.

Births, Marriages, and Deaths.

BIRTHS.

BURGESS.—On April 14th, at Milverton Lodge, Victoria Park, Manchester, the wife of Arthur H. Burgess, of twin sons.

COLES.—On April 12th, at St. Margaret's-road, Oxford, the wife of Charles Coles, M.D., of a daughter.

DASHWOOD-HOWARD.—On Primrose Day, at Fairlight, Hampton Hill, S.W., the wife of A. Dashwood-Howard, B.A., M.D., L.R.C.P., of a daughter.

MACLEAN.—On April 18th, at Tollington Park, N., the wife of Kenneth Maclean, F.R.C.S., L.R.C.P. Edin., of a son.

MARRIAGES.

BURRIDGE—CURTIS.—On April 20th, at St. Joseph's, Highgate Hill, Henry Alfred Burridge, B.A., Trinity College, Dublin, M.R.C.S. Eng., L.R.C.P. Lond., to Adine Marie, elder daughter of R. L. Curtis, J.P., of Holmwood, and Vange Hall, Essex.

FAIRBANK—OGILVIE.—On April 21st, at Christ Church, Lancaster-gate, Harold Arthur Thomas Fairbank, M.S., F.R.C.S., to Florence Kathleen, younger daughter of the late Arthur Grame Ogilvie, of Sizewell.

GRANT—KINGHAM.—On April 17th, at St. Cuthbert's Church, West Hampstead, Charles Hamilton Grant, L.D.S.R.C.S. Eng., to Alice Marguerite Kingham, daughter of Mr. and Mrs. W. Box Kingham, of Mowbray-road, Brondesbury.

GREENWOOD—SHARLAND.—On April 17th, at St. George's Church, Beckenham, Captain A. R. Greenwood, R.A.M.C., to Edith Grace, eldest daughter of Charles Sharland, of Bonithon, Beckenham.

MYLES—FLETCHER.—On April 14th, at St. Philip and St. James' Church, Oxford, Surgeon T. W. Myles, R.N., to Dorothy Hume, youngest daughter of the Rev. Carteret J. H. Fletcher.

POPE—GRAVENER.—On April 14th, at St. George's Church, Fordington, Charles Alfred Whiting Pope, M.A., M.B. Cantab., to Marion Ruth Gravener, eldest daughter of Captain J. J. A. Gravener, R.N. (retired).

DEATHS.

FRASER.—On April 13th, at Tettenhall-road, Wolverhampton, John Fraser, M.D., aged 89 years.

NUNN.—On April 13th, at The Gaunt Tower, Kneesworth, Royston, Thomas William Nunn, F.R.C.S.

STILWELL.—On April 12th, at Hanover Lodge, Eastbourne, Henry Stilwell, M.D., aged 73 years.

TAYLOR.—On April 13th, at his residence, Beechwood Hall, Mapperley, Nottingham, Charles Bell Taylor, M.D. Edin., F.R.C.S.E.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

PUBLIC HEALTH IN SWAZILAND.

Mr. R. Clark Perkins, Government Medical Officer of Swaziland, in his report for the year 1907-08, which has just been received at the Colonial Office and presented with other papers to Parliament, states that during the period under review there were admitted to the Government Hospital at Mbabane 39 patients, whilst the out-patients numbered 1275. The hospital accommodation is poor, but steps are being taken to improve it. The native does not, as a rule, avail himself to any great extent of the medical treatment provided for him, preferring to be attended by his own medicine man. The greatest use he makes of the hospital is for the extraction of teeth and the dressing of wounds. Latterly, however, there has been an increase of attendance for ordinary ailments, and as education and white influence advance greater advantage will no doubt be taken of the opportunities afforded in this direction. The majority of wounds dealt with are caused by knobsticks or spears. The natives are a peaceable and law-abiding race until the season for beer arrives—i.e., the winter—and if some restrictions were imposed upon the making of the drink there would be fewer cases of murder and serious wounding. In about 75 per cent. of the post-mortem examinations made death was due to wounds or injuries received during or after a drinking bout. Swaziland is, roughly, divided longitudinally into three regions, the higher, middle, and lower. The higher region is from 4500 to 3000 feet; the middle from 2000 to 1500. Both these regions are healthy. In the lower or bushveld region malarial fever is prevalent amongst white and black; particularly was it so during the end of 1906 and the beginning of 1907. A few cases of contagious conjunctivitis were treated in hospital; on occasions whole kraals suffer from this disease. Only two cases of tuberculosis came under treatment, but this cannot be taken as giving a fair estimate of the prevalence of the disease. No small-pox has been reported during the year. The natives have learnt to appreciate the value of vaccination, and it is hoped to carry out systematic vaccination yearly. On one occasion the whole of the Royal kraal, including the young paramount chief, underwent the operation. Syphilis is very widespread indeed. Owing to the great expense of carrying out quarantine regulations the disease is difficult to cope with, and persons suffering from this complaint have every facility for spreading the infection. Some cases have been treated in hospital, but the great majority at their own kraals, where the only thing that can be done to prevent the spread of the disease is to point out the risk of communicating it to others. Every opportunity is taken of warning the natives of this danger. There are a few known lepers in the country, but with the precautionary measures taken it is not anticipated that there is any danger of the disease spreading. There has been a severe epidemic of whooping-cough during the year, whites and natives suffering alike. Amongst the former there were two deaths, but no record is obtainable of the deaths among the natives, though the mortality is known to have been large, even among those under treatment. The natives, as a rule, respond to surgical treatment much better than to medical. Diseases of the lungs are particularly fatal to them. Under the heading of diseases of the skin, ulcers and scabies make up the great majority. For midwifery the natives have their own practitioners, whose methods are of the rough-and-ready description. The Swazi appears to have a knowledge of drugs, and not infrequently gets rid of the fruits of illicit love. One drug used in cases of diarrhœa is most effective. There is no laid-on water-supply in Mbabane, but an abundant and pure supply is available. The sanitary system has been much improved, dry earth-closets being in use in the village, gaol, and police camp. The general public health has been good. The census return shows the European population at 890, and the native population at 84,529.

THYMOL IODIDE AND FERROUS SULPHATE IN THE TREATMENT OF CHRONIC ULCERS.

IN the *Military Surgeon* for April Dr. Mark J. White recommends the use of a dusting powder, containing equal parts by weight of thymol iodide and dried ferrous sulphate, in the treatment of chronic ulcers of the skin. After washing the ulcer with carbolic lotion and removing all crusts from the borders the surface is dried and covered with the powder. As soon as the ferrous sulphate produces a burning sensation the excess of powder is blown off, leaving only a thin adherent film, which is covered thickly with zinc ointment and protected by gauze, strips of adhesive plaster, and a bandage. The dressings should be renewed every 48 hours, care being taken to avoid an excess of the powder which would cause severe pain. Any acute inflammation of the surrounding tissues should first be treated by means of moist antiseptic dressings. If the ulcer is so large that more than six or eight applications of the powder are required its use should be interrupted for four or five days and only the zinc ointment applied in order to avoid over-stimulation of the granulations. This dusting powder is applicable to all varieties of chronic ulcerations of the skin, regardless of their etiology, and it is very serviceable in the treatment of slowly healing bubo-extirpation wounds that so frequently keep men off duty and in hospital for a long time.

J. A. S.—We cannot state exactly what view the General Medical Council would take of the situation if it were brought to its notice, but it is quite likely that a medical man holding such a post might be asked to sever his connexion with the medical profession. Our own opinion is that a medical man should not place himself in such a position as that described by our correspondent.

M.D.—The terms are not necessarily synonymous, but we shall be happy to publish a letter on the matter from our correspondent, if the initials which he adopts are supplemented by his name and address.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

MONDAY.

ODONTOLOGICAL SECTION (Hon. Secretaries—H. W. Trewby, D. P. Gabell, J. Howard Mummery): at 8 P.M.

Paper:

Mr. Harold Simms: Some Experiments on the Action of Formalin and Other Root Dressings.

Casual Communication:

Mr. Harold Chapman and Mr. Ernest Rock Carling: A Case of Round-celled Sarcoma of the Lower Jaw. (The patient will attend at 7.30 P.M.)

TUESDAY.

MEDICAL SECTION (Hon. Secretaries—Herbert P. Hawkins, A. M. Gossage): at 5.30 P.M.

Paper:

Dr. O. K. Williamson: Clinical Observations on the Influence of the Vessel Wall on (so-called) Arterial Blood-pressure Readings.

FRIDAY.

CLINICAL SECTION (Hon. Secretaries: Raymond Johnson, H. D. Rolleston): at 8 P.M.

Cases:

Mongols and Conditions that have been Confused with Mongolism—Dr. L. G. Guthrie, Dr. Sutherland, Dr. Morley Fletcher, Dr. Poynton, Dr. Langmead, and Dr. Harry Campbell.

Mr. J. Jackson Clarke: Cases of Congenital Hip Disease treated by the Manipulative Method of 1904.

Mr. W. G. Spencer: Reduction of an Old Subcoracoid Dislocation of Shoulder, Complicated by Fracture of Humerus, by Excavating the Glenoid Cavity.

Dr. H. G. Turney: Trophœdema following Trauma.

Dr. Savill and Dr. P. Green: Sclerodermia of the Extremities in a Woman the subject of Angeioneurotic Œdema.

Mr. C. Gordon Watson: Double Infantile Coxa Vara treated by Subtrochanteric Osteotomy.

Mr. H. B. Robinson and Dr. W. H. Bowen: Hereditary Transmission of Claw Hand and Foot in Mother and Child; Mother shown at the Clinical Society in 1887.

Paper (at 9.40 P.M.):

Mr. W. Fedde Fedden: Six Cases of Infective Gangrene of the Extremities.

N.B.—Fellows of the Society are entitled to attend and to speak at all Meetings.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—Clinical Evening. Cases will be in attendance at 8 P.M.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

FRIDAY.—5 P.M., Prof. Keith: On Specimens of Cleft Palate and Malformations of the Tongue. (Museum Demonstration.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. M. H. MacLeod: Clinique (Skin).
TUESDAY.—4 P.M., Dr. L. Williams: Clinique (Medical).
WEDNESDAY.—4 P.M., Mr. A. Edmunds: Clinique (Surgical).
THURSDAY.—4 P.M., Sir Jonathan Hutchinson: Clinique (Surgical).
FRIDAY.—4 P.M., Dr. J. Horne: Clinique (Ear, Nose, and Throat).

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson); X Rays. 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).
TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations (Mr. Carson). Clinics:—Surgical Out-patient (Mr. W. Edmunds); Gynæcological (Dr. A. E. Giles).
WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks).
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. H. W. Carson); X Rays. 3 P.M., Medical In-patient (Dr. G. P. Chappel).
FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Operations (Mr. W. Edmunds). Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W.

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.
TUESDAY.—5 P.M., Clinical Demonstration: Dr. J. Mackenzie.
WEDNESDAY.—3 P.M., Clinical Demonstration: Dr. F. Palmer.
THURSDAY.—3 P.M., Clinical Demonstration: Dr. T. D. Savill.
FRIDAY.—2 P.M., Clinical Demonstration: Dr. P. Stewart. 5.30 P.M., Clinical Demonstration: Dr. E. Macnamara.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3.45 P.M., Lecture:—Mr. Stuart-Low: Accessory Sinuses.
FRIDAY.—3.45 P.M., Lecture:—Mr. Stuart-Low: Accessory Sinuses.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.).

TUESDAY (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (28th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (29th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (1st).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospital operations are performed daily.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, April 22nd, 1909.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
April16	29·90	S.W.	...	94	64	48	47	53	Fine
,, 17	29·91	S.W.	0·02	111	62	48	52	53	Overcast
,, 18	29·87	S.W.	0·01	111	63	49	55	60	Cloudy
,, 19	29·84	S.E.	...	112	68	45	49	50	Fine
,, 20	29·89	W.	0·63	112	62	49	48	53	Cloudy
,, 21	30·01	E.	...	96	61	45	46	51	Fine
,, 22	29·75	S.W.	...	115	60	47	49	53	Fine

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